

1501253 B.C Ltd.

# Spill and Fuel Management Plan

## **Coppermine Project**

Coppermine River area, Kugluktuk

2026/05/01

Version 2.1

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## Introduction

Sommerset Minerals Ltd., as 1501253 B.C. Ltd (the Company) is a Vancouver, B.C. registered exploration company based out of Australia. The Company is focused on exploring for copper in the Kitikmeot Region of Nunavut approximately 60 km southwest of the community of Kugluktuk. The Coppermine Project (the Project) comprises a 1,665 km<sup>2</sup> area of highly prospective copper and silver ground, hosted in the Copper Creek Formation basalts. The Company holds 53 mineral claims on Crown land and 49 on Inuit Owned Land (IOL). The Company also has a Mineral Lease with Nunavut Tunngavik for exploration activities on Inuit Owned Land subsurface.

The Company is applying for a Class A land use permit for exploration on Crown Land, a Type III Land Use License for exploration on Inuit Owned Land, and to amend the existing Nunavut Water Board license for increased water use. The proposed plan is to establish two camps to support drilling and other mineral exploration surveys.

The Company currently has the following permits in place, under which it completed its first exploration campaign based out of Kugluktuk.

- Nunavut Planning Commission (NPC), Project Proposal - NPC 150589. Exempt from Nunavut Impact Review Board (NIRB) screening.
- Kitikmeot Inuit Association (KIA), Land use License III - KTL325C002. Allows activities on CO-53, CO-54, CO-58, CO-60, and CO-61.
- Crown Indigenous Relations and Northern Affairs Canada (CIRNAC), Type B Land Use Permit (LUP) - N2025C005.
- Nunavut Water Board (NWB), Type B Water license - 2BE-CPM2527. Water use/disposal up to 20m<sup>3</sup>/day.

Proposed exploration activities under the new licenses and permits are to include prospecting, non-invasive aerial or ground geophysical surveys, downhole geophysical surveys, rock chip sampling, till sampling, diamond drilling, and RC drilling to test targets. Proposed activities may take place during summer, autumn, winter or spring, and take place anywhere within the Company's claims. Staff would be based out of the camps, and/or Kugluktuk. Exploration will take place on Crown Land and Inuit owned Land. Proposed exploration activities would be supported by helicopter, fixed wing, snow cats, snowmobiles, and ATVs as appropriate.

Fixed wing aircraft may use skis or floats to land on lakes or ice. Drill rig models to be used are small and have a very small footprint, and will have minimal ground disturbance. The drill site will sit on 8x8x16' timbers with coco matting underneath to minimize disturbance to tundra surface. Up to 299m<sup>3</sup> of water could be used each day for drilling and camp purposes, which will be taken from a nearby lake or river. While a typical diamond drill can use up to 30m<sup>3</sup> of water per day, water used for drilling will be recycled in a tank where reasonable to do so, and reused to reduce the amount drawn from water sources. Drummed jet fuel, diesel, and gas fuel may be stored within the project area at any given time. All fuel will be stored in secondary containment bermss, at least 31m away from the ordinary highwater mark of any waterbody.

It is expected that up to 49 people may be based out of a camp at any given time to support prospecting, drilling and geophysical surveys. One camp would be established on IOL at Jura, and one camp on Crown Land near the Hope Lake airstrip. The proposed camp, equipment and fuel would be either be skidded to the location

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from Kugluktuk during the winter via snowcat, or flown into Kugluktuk airport or Hope Lake airstrip and mobilized to the camp location via helicopter or fixed wing. These locations would be dependent on accessing a nearby water source for drilling and camp domestic services.

During winter, supplies may be transported from Kugluktuk to the drill site via winter tracks, supported by Kugluktuk based businesses or personnel. No all-weather roads or permanent structures will be built, and all waste material will be removed from the project area. Great care will be taken and consideration will be given to the environment at all times; with drill sites remediated as best as possible.

The Company understands the importance of the cultural and environmental values of the area in which they are proposing to conduct exploration activities to the people of Kugluktuk. As such, they commit to working together with all regulators and the community to ensure that minimal disturbance is made to the environment and that the land, water, and wildlife are not harmed or negatively impacted. The Company commits to working within the terms and conditions of all licenses and permits, and continues to seek the advice and assistance of local knowledge holders.

During the Blue Nose East Caribou Herd calving and post-calving, from 28<sup>th</sup> May to 1<sup>st</sup> of July, exploration activities will conform with approved Caribou mitigation measures and permit conditions.

### Equipment for Drilling

	Amount		Size	type	Use
Reverse Circulation Drill	1-3		4,400 (all components)	RC Hornet or similar	Chip samples
Diamond Drill	1-2		8,600 including rods and casings	Boyles 25A/37 or similar	Core samples
Solids removal equipment	1-2		3000 kg each	Built in 25 kW generator	Remove solids from drill water
Heater	1-4		150 kg	Frost Fighter	Heat drill shack
Generator	1-4		5 kw Gasoline generator or equivalent	20 kw diesel	Power for water pumps

### Equipment for Camps (Juro and Hope Lake)

Helicopter (s)	1-2	Bell 407 or similar	1300 kg	Drill moves, crew transport
Twin Otter	1	Standard skis or floats	16 m long	Resupply and equipment

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Snowmachines	1-8	Standard	200 kg	Transport to/from drills, geophysics, camp support
ATV and trailer	1-4	Standard	500 kg	Transport equipment and supplies
Inflatable boat	1-2	Zodiac or similar	300 kb	Lake bathymetry
Diesel generator	1-4	20 kw diesel generator or similar – 500 kg	20 kg	Camp power
Water pumps	1-4	Standard	10 kg	generator; Drill Rig/camp support
<b>Per camp</b>				
freezer	2	Standard	chest	Domestic use
stove	2	Standard	30"	Domestic use
fridge	2	Standard		Domestic use
Generator	2	20 kw		Camp/ water pumps
Water Pump	2	Honda WT20XK4C or equivalent		Water for camp
Incinerator	1	Dual chamber		Incinerate camp waste
Pacto Toilets	4	Regular		Human waste
Washer	2	Regular		Clothes washing
Dryer	2	Regular		Clothes drying
Toyo Stove	13	L731/732 or equivalent		Tent heat

**Equipment for Ice road or overland winter property access:**

Sloop or equivalent	2	5000 kg	Winter/Ice Road low pressure transport trailer/sled on tracks or skis
Chieftan or equivalent	2	31,700 kg	Winter/Ice Road low pressure transport
Snow cat or similar	3	98,000 kg	Winter/Ice Road low pressure transport
Frost Fighter	3	150 kg	heating
light tower	3	150 kg	lighting
Water truck	1	11,250 kg	Winter/Ice Road
			<b>Depending on scale (this would be the max if significant work required )</b>

Skid steers or equivalent	1	5000 kg	Moving drill rigs
Dozer or equivalent	1	10,000 kg	Moving drill rigs
Loader	1	6,800 kg	Ice road maintenance
Hagglund or similar	2	4500 kg	Winter/Ice Road low pressure transport
Service Trucks	2	2500 kg	Ice road transport
Grader	1	21,700 kg	Winter/Ice road construction and maintenance
Plough truck or equivalent	1	17,700 kg	Winter/Ice road construction and maintenance

### Camp Infrastructure for each camp

Sleeper tents	4.3 x 4.9	9
First aid tents	4.3 x 4.9	1
Kitchen dining room	4.8 x 9.8	1
Men's Dry	4.8 x 9.8	1
Women's Dry	4,8 x 9.8	1
Office	4.3 x 4.9	1
Core Shack	4.3 x 9.8	1
Drill/Mud/Lubricants shack	4.3 x 4.9	1
Toilet Facilities	4.3 x 4.9	1
Generator Shack	3.7 x 4.9	1
Storage Shack	4.3 x 4.9	1
Pump Shack	4 x 4	1
Emergency shelter for drill	10 x 10	1-4

### Fuel:

Type	Size	Amount	Use	Disposal
Diesel	205 liter drums	200	Generator/heating/drill support	Backhaul empties to Yellowknife
Jet A	205 liter drums	200	Helicopter refuel	Backhaul empties to Yellowknife
Propane	100 lb cylinders	30	Cooking	Backhaul empties to Yellowknife
Gasoline	205 liter drums	10	camp support/Snowmachine/AT V/generator	Backhaul empties to Yellowknife
Oil	20 L buckets	50	generator; Drill Rig/camp support	Backhaul to camp, and then remove to Kugluktuk to be transported to an approved facility

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				for disposal
Lubricants	20 L buckets	50	drill	Backhaul to camp, and then remove to Kugluktuk to be transported to an approved facility for disposal
Drill Mud/additives	20 L buckets	50	drill	Backhaul to camp, and then remove to Kugluktuk to be transported to an approved facility for disposal

Small fuel caches (outside of Kugluktuk) would be located along the airstrip at Hope Lake near the camp, at each camp location, and at each drill site (4-12 drums at each rig). All fuel will be stored in secondary containment and covered with tarps to prevent water/snow accumulated with the program is not active.

All fuel drums will be stored within 20 ft × 20 ft lined bermed secondary containment systems or approved portable secondary containment units, each designed to contain at least 110% of the volume of the largest single drum within the containment area, with additional freeboard to accommodate precipitation and site-specific conditions.

Fuel storage will be distributed across camps, drill sites, and temporary fuel cache locations to avoid large centralized storage areas. All fuel storage locations will be set back a minimum of 31 m from the ordinary high-water mark of any waterbody and will be subject to daily inspection and maintenance to ensure continued containment integrity.

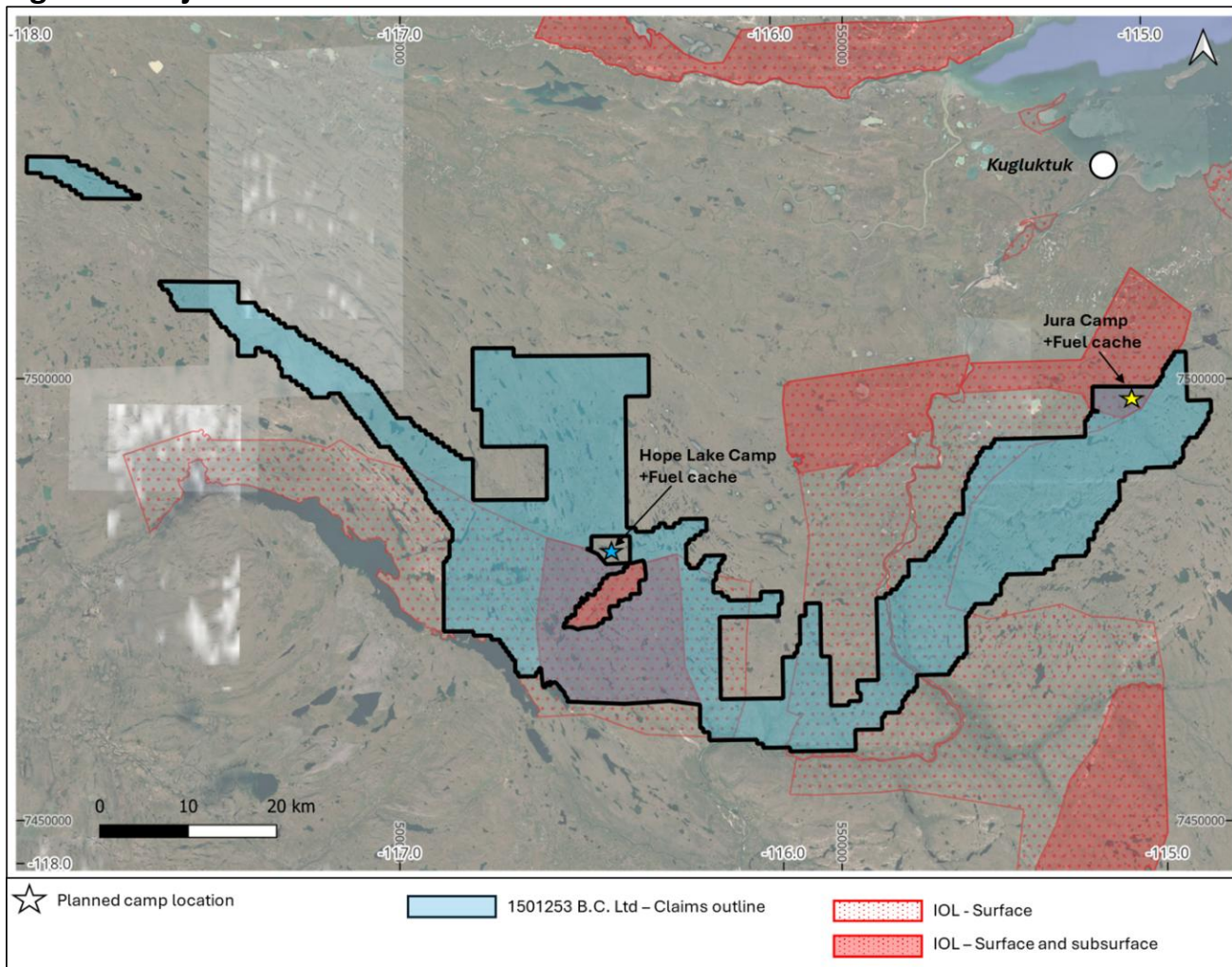
Spill kits will be located at both camp and at the drill rigs. Kits will contain at minimum fuel absorbent pads, heavy duty plastic bags, tarps, and empty drums or buckets, and hand tools.

After drilling is complete and the site is remediated, 1501253 B.C Ltd will conduct a thorough inspection of each drill location area to check for:

- Hydrocarbon staining
- Fire and safety hazards
- Debris or litter

1501253 B.C Ltd commits to taking a series of photographs of the drill site locations before and after the activities are complete, for recording and reporting purposes. All items, waste, and fuel barrels will be removed upon completion of each hole.

Figure 1. Project Location



All employees and contractors working on site will be made familiar with the fuel storage practices, spill prevention measures, and spill response actions detailed in this Spill Management Plan. The Plan will be printed and laminated and left at each camp, fuel cache and drill rig.

The Company Manager and Senior Geologist will be present in-country and actively managing the program, ensuring timely local response and coordination in the event of a spill. In the absence of the site supervisor, the Senior Geologist will assume responsibility as the primary on-site contact for spill-related matters.

The site supervisor for the Coppermine Project, and main contact for all spill related matters is listed below:

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**Senior Geologist**

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## 2.0 Potential Spill Materials Inventory

Given the scope of activities proposed for the 2025 and 2026 field seasons, a limited number of hazardous materials will be present onsite. All fuel containers will be stored at least 31 meters away from the Ordinary High-Water Mark of any water body. See Table 1 below for a list of hazardous materials stored on site which could lead to a spill.

**Table 1. Project Spill Materials Inventory – Confirm totals**

Material	size and type	max on site	Location	Spill Prevention Measures
Jet fuel	205 L metal drums	200	Camp	<ul style="list-style-type: none"> <li>• Drums stored within secondary containment</li> <li>• Insta-berm and/or absorbent pad used to catch any drips during fuel transfer</li> <li>• Daily inspections of fuel cache to check for leaks or damaged drums, all issues to be addressed immediately</li> <li>• Helicopter fueling only conducted by qualified personnel such as the pilot or engineer</li> <li>• Mark all fuel caches with flags, posts, or similar devices to make them plainly visible, even when buried under snow.</li> </ul>

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Material	size and type	max on site	Location	Spill Prevention Measures
Diesel	205 L drums	200	Camp	<ul style="list-style-type: none"> <li>• Drums stored within secondary containment</li> <li>• Insta-berm and/or absorbent pad used to catch any drips during fuel transfer</li> <li>• Daily inspections of fuel cache to check for leaks or damaged drums, all issues addressed immediately</li> <li>• Mark all fuel caches with flags, posts, or similar devices to make them plainly visible, even when buried under snow.</li> </ul>
Diesel	205 L drums	4-12	drills	<ul style="list-style-type: none"> <li>• same as the camp diesel</li> </ul>
Gasoline	205 L drums	10	camp	<ul style="list-style-type: none"> <li>• Containers stored within secondary containment or in drill rig shelter</li> <li>• Insta-berm and/or absorbent pad used to catch any drips during fuel transfer</li> <li>• Daily inspections of fuel storage site to check for leaks or damaged containers, all issues addressed immediately</li> <li>• Mark all fuel caches with flags, posts, or similar devices to make them plainly visible, even when buried under snow.</li> </ul>

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Material	size and type	max on site	Location	Spill Prevention Measures
Engine oils, lubricants, grease, coolant etc.	20 L tub	25	dril	<ul style="list-style-type: none"> <li>in containment ---same as camp</li> </ul>
Engine oils, lubricants, grease, coolant etc.	20 L tub	25	Camp	<ul style="list-style-type: none"> <li>Containers stored within secondary containment or in drill rig shelter</li> <li>Insta-berm and/or absorbent pad used to catch any drips during fuel transfer</li> <li>Daily inspections of fuel storage site to check for leaks or damaged containers, all issues addressed immediately</li> <li>Mark all fuel caches with flags, posts, or similar devices to make them plainly visible, even when buried under snow.</li> </ul>
Propane	100 lb tanks	30	camp	<ul style="list-style-type: none"> <li>up to 15 tanks at each camp</li> <li>Tanks will be moved to the drill rigs as required to support drilling activities</li> </ul>

### 3.0 Response Plan

In the event of a spill, the following procedures will be followed to ensure a swift and effective response, minimizing impacts to the receiving environment:

#### **General Spill Response Procedures**

1. Ensure all personnel are safe and there are no immediate dangers.
2. Remove all potential sources of ignition from the immediate area. Turn off all operating machinery and isolate electronics.
3. Identify the source of the spill and, if possible, stop the flow.
4. Inform the site supervisor immediately. The site supervisor will likely be onsite, but if they aren't, then contact them via radio or satellite phone (contact details to be provided with spill kit).
5. Contain the spill using spill response materials such as absorbent pads, absorbent booms, or barriers.
6. Initiate clean-up and remedial actions, ensuring that GPS coordinates, photographs, and general notes (substance, estimated spill volume, etc.) are taken for reporting purposes.
7. Segregate contaminated soils, snow/ice, water, and absorbents in separate, clearly labelled 205 L metal drums for eventual shipment off-site.
8. Track spill internally using the Spill Tracker (Appendix A).
9. As per the minimum reportable quantities in the Northwest Territories-Nunavut Spill Management Planning and Reporting Regulations, all externally reportable spills accordance with section 9 and schedule B of the Spill contingency Planning and Reporting Regulations, or any spill near or into water regardless of volume, will be reported to the 24-Hour Spill Report Line and the Inspector:

**24-Hour Spill Report Line: +1 (867) 920-8130**

**Inspector: +1 (867) 975-4284** (or as indicated by Crown-Indigenous and Northern Affairs Canada in the Project land use permit). Though not required by legislation, it is best practice to report all spills to the Spill Line and Inspector.

Person reporting a spill shall give as much information as possible on the following:

- (a) date and time of spill;
- (b) location of spill;
- (c) direction spill is moving;
- (d) name and phone number of a contact person close to the location of spill;
- (e) type of contaminant spilled and quantity spilled; (f) cause of spill;
- (g) whether spill is continuing or has stopped;
- (h) description of existing containment;
- (i) action taken to contain, recover, clean up and dispose of spilled contaminant;

- (j) name, address and phone number of person reporting spill;
  - (k) name of owner or person in charge, management or control of contaminants at time of spill.
10. Conduct an investigation into the cause, to prevent a repeat of the incident.
  11. Within 30 days of the spill, the site supervisor or designate will submit a detailed report to the Inspector, as per conditions of the Project land use permit.

### **Spill Response Procedures for Different Media**

1. To improve response effectiveness, personnel should follow specific guidance based on the spill medium:

#### **Spills on Snow and Ice**

- a) Use absorbent materials to contain and collect liquid spills, and to stop spill spreading any further. Once spill is contained, proceed with removing contaminated ice and snow.
- b) Shovel contaminated snow/ice into labelled drums, or if none are immediately available, place in plastic-lined containment areas for transfer to drums as soon as possible.
- c) Avoid disturbing underlying ice to prevent contamination of water bodies.

#### **Spills on Soil**

- a) Construct containment berms using shovels etc to dig trenches or build berms, or use spill containment barriers. Create these downhill to focus spill material and prevent it spreading.
- b) Excavate contaminated soil using shovels and rakes, and store it in labelled drums for off-site disposal.
- c) Apply absorbents if to aid in clean-up.

#### **Spills in Water\***

- a) Prevent further contamination by stopping the spill source promptly.
- b) Deploy absorbent booms, pads and skimmers to contain and absorb spilled substances. Deploy booms with a boat or by hand to prevent spill from spreading and reaching fragile shorelines or being blown away by wind or current.
- c) Remove absorbents and store it in labelled drums for off-site disposal, skim off contaminated top layer of water.

*\*The company does not expect there to be any chance of spills in/on water, as **no drilling** will be conducted within 31 metres of the high-water mark of any water body. The company will **not** drill on any frozen lakes or rivers.*

## 4. Resource Inventory

Fully stocked spill kits will be maintained in the camps and at the drills and will be placed in an appropriate location near fuel storage and fuel transfer. Spill kits are placed in clearly marked, weather-protected locations adjacent to fuel storage areas and areas where fuel transfer occurs, and are positioned so they remain accessible in winter conditions. Spill kit locations will be identified on the site layout / camp map for each operating area and reviewed with personnel during site orientation.

Small spill kits will be carried on ground vehicles used for fuel transport or fuel transfer, including snowcats, ATVs, service vehicles, or other overland equipment. Aircraft supporting the Project will carry spill-response equipment as part of their standard emergency equipment. If a spill occurs during transport, personnel will stop where safe, contain the spill using available spill-response materials, protect nearby water or drainage pathways, notify the Site Supervisor, and follow the spill reporting and clean-up procedures in this Plan.

Miscellaneous equipment present on site will be made available for spill response such as shovels, fuel transfer pumps, hand tools, and hoses/fittings.

A minimum of one 305 L spill kit and instruction manual will be located at the fuel caches, and at each camp location. Each 305 L spill kit contains at a minimum, the following materials:

Spill Response Material	Min. Quantity per Kit	Spill Response Material	Min. Quantity per Kit
Absorbent Socks	6	Caution tape	1 roll
Absorbent pads	40	Nitrile gloves	10 pairs
Pillows	4	Safety goggles	2
Absorbent cloth roll	1	Protective coveralls	2
Premixed plugging compound	1 container	Plastic disposal bags	10
Plastic sheets/tarp	2	Picks/shovels/rakes	1 set
Instruction booklet	1		

Smaller 20 L spill kits will also be used on site for activities such as fuel transfers. These spill kits include:

Spill Response Material	Min. Quantity per Kit	Spill Response Material	Min. Quantity per Kit
Absorbent Socks	2	Disposal bags	5
Absorbent pads	10	5 L polyethylene pail	1

Nitrile gloves	5 pairs	Instruction booklet	1
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The Company will ensure that empty, sealed-top 205 L metal drums are present on site to manage all waste liquids, or to transfer liquids into if any drums are compromised. Open- top 205 L metal drums and/or lined mega bags will be present on site for disposal and eventual shipment of any contaminated absorbents and contaminated soil. All recovered materials are segregated by waste type where practicable, clearly labelled, staged in a designated containment area, and removed from site for disposal at an approved facility.

The Site Supervisor (or designate) conducts daily visual inspections of fuel storage/fuel handling areas and confirms spill kits are present, accessible, and fully stocked to minimum quantities. Inspection results and any deficiencies are recorded in a daily checklist/log kept at camp.

Following any use of spill kit materials (including minor operational spills), the Site Supervisor ensures kits are restocked to minimum quantities as soon as practicable and in all cases before the next fuel transfer cycle.

Replacement materials are drawn from on-site resupply stock maintained at camp. If resupply stock is drawn down, replacement materials are mobilized from Kugluktuk (or the next available logistics hub) to re-establish minimum inventory levels.

The Site Supervisor is responsible for maintaining spill kits at required minimum contents and for initiating resupply requests. Senior Management provides logistical support to ensure spill response inventory remains available throughout the operating season.

## 2. Roles and Responsibilities

**1501253 B.C Ltd Senior Management** - Responsible for ensuring that the site supervisor is aware of spill response and reporting procedures, as well as appropriate mitigations to prevent spills from occurring. The Senior Management team will ensure that management plans are properly implemented and that the site supervisor is familiar with the conditions of site authorizations such as the land use permits and water license. Senior management will ensure that the Spill Contingency Plan is reviewed and assessed on an annual basis, in accordance with Section 7(1) of the Regulations

**Site Supervisor** – Responsible for ensuring employees and contractors on site are aware of spill response equipment and procedures, as well as appropriate mitigations to prevent spills from occurring. The site supervisor is responsible for implementing management plans such as the Spill management Plan to minimize environmental impacts from the Project. Should a spill occur, they will ensure proper documentation and that the appropriate authorities are notified in a timely manner.

**Staff and Contractors** – All personnel working on site must be familiar with the Spill management Plan and understand how to respond to a spill. Staff and contractors must adhere to the Spill management Plan to help minimize wildlife attractants and environmental risks created by the

Project.



## 2.0 Appendix A: DAILY FUEL STORAGE & SPILL KIT INSPECTION CHECKLIST\_V1\_Effective as of 04.02.2026

### DAILY FUEL STORAGE & SPILL KIT INSPECTION CHECKLIST\_V1\_Effective as of 04.02.2025

Project Coppermine Project  
 Date Time  
 Location (Camp/Drill/Fuel Cache) Specific Area  
 Inspector Name Role  
 Weather Conditions Signature

FUEL STORAGE INSPECTION			
Inspection Item	Yes	No	Comments
Fuel drums upright and secure			
Drums intact (no leaks, corrosion, bulging)			
Drum bungs and lids secure			
Secondary containment in place and undamaged			
No staining on soil, snow, or ice			
Storage area $\geq 31$ m from water bodies			
Area clearly marked / flagged			
Tarps or covers functional (if applicable)			
SPILL KIT PRESENCE & ACCESSIBILITY			
Inspection Item	Yes	No	Comments
Spill kit present at required location			
Spill kit clearly marked			
Spill kit accessible (not buried/obstructed)			
Container in good condition			
Instruction booklet present			

305L Spill kit inventory compliant with			
20L Spill kit inventory compliant with			
<b>RECOVERY CONTAINERS</b>			
Item	Yes	No	Comments
Empty sealed-top 205 L drums available			
Open-top 205 L drums / lined mega bags available			
Containers in good condition and labelled			
<b>DEFICIENCIES &amp; CORRECTIVE ACTIONS</b>			
Deficiency Identified	Date Completed		Corrective Action
<b>SPILL KIT REPLENISHMENT</b>			
Spill Kit Location	Materials Used	Replenished On Site (Y/N)	Replacement ordered (Y/N)

**INSPECTOR DECLARATION**

I confirm this inspection was completed and deficiencies corrected or reported.

**SCHEDULE B****(Section 9)**

<i>Item No.</i>	<i>TDGA Class</i>	<i>Description of Contaminant</i>	<i>Amount Spoiled</i>
<b>1.</b>	1	Explosives	Any amount
<b>2.</b>	2.1	Compressed gas (flammable)	Any amount of gas from containers with a capacity greater than 100 l.
<b>3.</b>	2.2	Compressed gas (non-corrosive, non flammable)	Any amount of gas from containers with a capacity greater than 100 l.
<b>4.</b>	2.3	Compressed gas (toxic)	Any amount
<b>5.</b>	2.4	Compressed gas (corrosive)	Any amount
<b>6.</b>	3.1, 3.2, 3.3	Flammable liquid	100 l
<b>7.</b>	4.1	Flammable solid	25 kg
<b>8.</b>	4.2	Spontaneously combustible solids	25 kg
<b>9.</b>	4.3	Water reactant solids	25 kg
<b>10.</b>	5.1	Oxidizing substances	50 l or 50 kg
<b>11.</b>	5.2	Organic Peroxides	1 l or 1 kg
<b>12.</b>	6.1	Poisonous substances	5 l or 5 kg
<b>13.</b>	6.2	Infectious substances	Any amount
<b>14.</b>	7	Radioactive	Any amount
<b>15.</b>	8	Corrosive substances	5 l or 5 kg
<b>16.</b>	9.1 (in part)	Miscellaneous products or substances, excluding PCB mixtures	50 l or 50 kg
<b>17.</b>	9.2	Environmentally hazardous	1 l or 1 kg
<b>18.</b>	9.3	Dangerous wastes	5 l or 5 kg
<b>19.</b>	9.1 (in part)	PCB mixtures of 5 or more parts per million	0.5 l or 0.5 kg
<b>20.</b>	None	Other contaminants	100 l or 100 kg



Canada

# NT-NU SPILL REPORT

OIL, GASOLINE, CHEMICALS AND OTHER HAZARDOUS MATERIALS

NT-NU 24-HOUR SPILL REPORT LINE

TEL: (867) 920-8130

FAX: (867) 873-6924

EMAIL: spills@gov.nt.ca

REPORT LINE USE ONLY

A	REPORT DATE: MONTH – DAY – YEAR		REPORT TIME		<input type="checkbox"/> ORIGINAL SPILL REPORT, OR <input type="checkbox"/> UPDATE # _____ TO THE ORIGINAL SPILL REPORT	<b>REPORT NUMBER</b>  _____
	B		OCCURRENCE DATE: MONTH – DAY – YEAR			
C	LAND USE PERMIT NUMBER (IF APPLICABLE)			WATER LICENCE NUMBER (IF APPLICABLE)		
D	GEOGRAPHIC PLACE NAME OR DISTANCE AND DIRECTION FROM NAMED LOCATION				REGION <input type="checkbox"/> NWT <input type="checkbox"/> NUNAVUT <input type="checkbox"/> ADJACENT JURISDICTION OR OCEAN	
E	LATITUDE			LONGITUDE		
	DEGREES	MINUTES	SECONDS	DEGREES	MINUTES	SECONDS
F	RESPONSIBLE PARTY OR VESSEL NAME		RESPONSIBLE PARTY ADDRESS OR OFFICE LOCATION			
G	ANY CONTRACTOR INVOLVED		CONTRACTOR ADDRESS OR OFFICE LOCATION			
H	PRODUCT SPILLED		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER		
	SECOND PRODUCT SPILLED (IF APPLICABLE)		QUANTITY IN LITRES, KILOGRAMS OR CUBIC METRES	U.N. NUMBER		
I	SPILL SOURCE		SPILL CAUSE	AREA OF CONTAMINATION IN SQUARE METRES		
J	FACTORS AFFECTING SPILL OR RECOVERY		DESCRIBE ANY ASSISTANCE REQUIRED	HAZARDS TO PERSONS, PROPERTY OR ENVIRONMENT		
K	ADDITIONAL INFORMATION, COMMENTS, ACTIONS PROPOSED OR TAKEN TO CONTAIN, RECOVER OR DISPOSE OF SPILLED PRODUCT AND CONTAMINATED MATERIALS					
L	REPORTED TO SPILL LINE BY	POSITION	EMPLOYER	LOCATION CALLING FROM	TELEPHONE	
M	ANY ALTERNATE CONTACT	POSITION	EMPLOYER	ALTERNATE CONTACT LOCATION	ALTERNATE TELEPHONE	
<b>REPORT LINE USE ONLY</b>						
N	RECEIVED AT SPILL LINE BY	POSITION STATION OPERATOR	EMPLOYER	LOCATION CALLED YELLOWKNIFE, NT	REPORT LINE NUMBER (867) 920-8130	
LEAD AGENCY <input type="checkbox"/> EC <input type="checkbox"/> CCG <input type="checkbox"/> GNWT <input type="checkbox"/> GN <input type="checkbox"/> ILA <input type="checkbox"/> INAC <input type="checkbox"/> NEB <input type="checkbox"/> TC			SIGNIFICANCE <input type="checkbox"/> MINOR <input type="checkbox"/> MAJOR <input type="checkbox"/> UNKNOWN		FILE STATUS <input type="checkbox"/> OPEN <input type="checkbox"/> CLOSED	
AGENCY		CONTACT NAME	CONTACT TIME	REMARKS		
LEAD AGENCY						
FIRST SUPPORT AGENCY						
SECOND SUPPORT AGENCY						
THIRD SUPPORT AGENCY						

1501253 B. C. LTD. (Somerset Minerals)  
Diamond Drilling  
**Closed Loop Mud System**

- **All drill fluids will be contained within an entirely closed system, with drip-trays and berms used as appropriate.**
- Drilling will utilize a modified closed loop fluids system. The system will be comprised of 'T-junction' connected to the NQ /HQ drillhole casing, leading to a portable heavy duty plastic secondary tank (500 to 1000 liters), sitting beside the drill collecting drill fluids by gravity, then the fluid will be pumped with a electric submersible pump back to the fly tank (1500 liters), then through a heater, before being pumped back down the drill casing. The portable trough will settle the cuttings and also serve as a mixing tank for non-toxic calcium chloride. The main fly tank has two reservoirs and also works for mud and calcium chloride mixing. There will be two locations to monitor salt content and mud properties. The water pump and lines will be used for initial drill fluid creation as required, and have a T gate on the feed line to the rig so the pump (when water isn't required) would just circulate to the source and cut down on volumes used. The pumps have flow meters.
- The drill will have two water heaters for use.
- Use of a **closed system** will also make it simple to maintain mud and salt levels as there will not be dilutive water continually introduced to the system.
- Mud testing will be tested via viscosity funnel & cup and mud balance, and for the calcium chloride either a either a handheld spectrometer or test strips. Either test only takes a few minutes.
- We have also attached a mud/salt drilling practise sheet for the drillers to guide their use for each hole and steps to follow in the event the main mud pump fails at the rig.

1501253 B. C. LTD. (Somerset Minerals)  
Diamond Drilling SOP  
**Salt, Mud, and Heat Practise**

**Initial rig setup:**

Once rig is properly sited on the pad:

- Set up closed system fluid recycling system.
- Fill the drill tank and half the secondary tank with water, then send pump water to recycle back to source.
- Test the backup gas driven engine pump to ensure it operational. Shut it off.
- Begin heating and drill first rod in, stop drilling.
- Begin adding calcium chloride according to specific hole details, get the concentration up to 16%, test every 20 minutes until at concentration.
- Then add required mud as noted on specific hole details and test mud.
- Begin advancing drilling.
- Measure temperature of fluid every hour when drilling.
- Test fluid for salinity and temperature every hour, and mud properties every 6 hours.
- If salinity drops, or the temperature drops then double check the heater and add calcium chloride to restore temperature and salinity levels.
- Advise foreman if there's a temperature drop before it reaches +8
- If the temperature reaches + 4 degrees immediately begin to pull rods, ensure the heater is functioning. The top 100 meters of the hole will likely be the coldest.
- Repeat if you need makeup water to complete the hole.


**If the main mud pump fails:**

- Immediately start the back up gas driven engine pump, attach the pre plumbed hose to the swivel and restore circulation.
- Advise the foreman.
- Test the salinity and temperature immediately.
- Continue operating the recycle system.
- Measure temperature of fluid every hour.
- Add calcium chloride to restore temperature and salinity levels.
- Provided the calcium chloride is at saturation the rods will not be frozen in, but the circulation needs to continue until the pump or equipment failure is repaired and restored.

# APPENDIX B: MSDS SHEETS

# Safety Data Sheet

Section 1. Identification		
<b>Product Identifier</b>	<b>Calcium Chloride</b>	<b>Version: 7</b> <b>Effective Date: 25 January 2021</b>
<b>Other Means Of Identification</b>	None	
<b>Initial Supplier Identifier</b>	Chemfax Products Ltd. 11444 – 42 Street SE Calgary, AB T2C 5C4 Tel: 403-287-2055	
<b>Recommended Use And Restrictions on Use</b>	Dust control, concrete curing agent. No restrictions	
<b>Product Family</b>	Inorganic Salt	
<b>Emergency Phone</b>	1-855-887-2055 Monday - Friday 8:00am - 4:30pm MST	

Section 2. Hazard Identification	
<b>Hazard Classification</b>	
<b>Health Hazards</b>	Skin Damage/Irritation – Category 2 Eye Damage/Irritation – Category 2B Acute Toxicity (oral) – Category 4
<b>Signal Word</b>	Warning
<b>Hazard Statement</b>	Causes skin irritation. Causes eye irritation. Harmful if swallowed.
<b>Precautionary Prevention Statement</b>	Wash hands thoroughly after handling. Wear protective gloves. Do not eat, drink or smoke when using this product.
<b>Precautionary Response Statement</b>	IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical attention. Take off contaminated clothing and wash it before reuse Specific treatment: treat as a thermal burn after decontamination. Do not induce vomiting unless directed by medical personnel. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. IF SWALLOWED: Call a doctor if you feel unwell. Rinse mouth.



# Safety Data Sheet

<b>Precautionary Storage Statement</b>	None
<b>Precautionary Disposal Statement</b>	Dispose of contents/container in accordance with local regulations.
<b>Other Hazards</b>	None

## Section 3. Composition / Information on Ingredients

Chemical Name	Common Name or Synonyms	CAS NO. and Other Unique Identifiers	% by weight
Calcium Chloride	None	10043-52-4	90

## Section 4. First-Aid Measures

<b>Eye Contact</b>	Flush eyes with water for 15 minutes. Seek medical attention.
<b>Skin Contact</b>	Flush area with water. If irritation persists seek medical attention. Launder clothing before reuse.
<b>Inhalation</b>	Remove victim to fresh air. If there is difficulty breathing, seek immediate medical attention.
<b>Ingestion</b>	Remove victim to fresh air. If there is difficulty breathing, seek immediate medical attention.
<b>Most Important Symptoms and Effects Both Acute and Delayed</b>	May cause skin and eye burns.
<b>Immediate Medical Attention and Special Treatment</b>	If burns are presented, treat as a thermal burn after decontamination.

## Section 5. Fire-Fighting Measures

<b>Suitable and Unsuitable Extinguishing Media</b>	Use extinguishing media suitable for surrounding fire. Do not use direct water jet.
<b>Hazardous Combustion Products</b>	None known.
<b>Specific Hazards Arising From the Product</b>	Dissolves exothermically in water.



Manufacturer of Specialty Chemicals

## Safety Data Sheet

<b>Special Protective Equipment and Precautions for Fire-Fighting</b>	Fire-fighters should wear self-contained breathing apparatus and full protective clothing. Use water spray to cool containers and structures exposed to fire.
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Section 6. Accidental Release Measures	
<b>Personal Precautions, Protective Equipment and Emergency Procedures</b>	Gloves, coveralls, safety glasses. Evacuate all unnecessary personnel, secure area and carefully sweep up spilt material.
<b>Environmental Precautions</b>	Do not allow spilled material to enter sewers and surface watercourses.
<b>Methods and Materials for containment and Clean-Up</b>	Carefully sweep up spilled material, avoid creating dust. Place material in a suitable container for disposal. Wash area thoroughly with water to remove residues.

Section 7. Handling and Storage	
<b>Precautions For Safe Handling</b>	Handle with care. Heat is generated in contact with water, this can be extremely high – try and keep temperature below 27 °C.
<b>Conditions For Safe Storage</b>	Store in a cool dry place. Keep containers tightly closed when not in use. Protect against moisture.

Section 8. Exposure Controls / Personal Protection				
<b>Control Parameters</b>	<b>TWA: 8 Hr</b>	<b>STEL: 15 min</b>	<b>Ceiling</b>	<b>IDLH *</b>
Calcium Chloride	15 mg/m <sup>3</sup> (Total)	5 mg/m <sup>3</sup> (Respirable)		
	OSHA			
	* Immediately Dangerous to Life and Health			
<b>Exposure Controls</b>	Local exhaust ventilation			
<b>Appropriate Engineering Controls</b>	Ensure eye wash station and safety shower are available.			
<b>Individual Protective Measures</b>				
<b>Eye / Face Protections</b>	Safety glasses			
<b>Skin Protection</b>	Chemical resistant coveralls and gloves			
<b>Respiratory Protection</b>	Dust mask.			

Section 9. Physical and Chemical Properties	
<b>Appearance</b>	White pellets
<b>Odour</b>	No odour
<b>Odour Threshold</b>	Not applicable.
<b>pH</b>	No data.
<b>Flash Point</b>	No data
<b>Boiling Point and Boiling Range</b>	>815 °C
<b>Melting Point / Freezing Point</b>	260 °C
<b>Evaporation Rate</b>	Not applicable.
<b>Flammability (solid, gas)</b>	Not flammable
<b>Upper and Lower flammability or Explosive Limits</b>	No data
<b>Vapour Pressure</b>	Not applicable.
<b>Vapour Density</b>	Not applicable.
<b>Relative Density</b>	2.2
<b>Solubility</b>	Soluble
<b>Partition co-efficient, n-Octanol/Water</b>	No data
<b>Auto-ignition Temperature</b>	No data
<b>Decomposition Temperature</b>	No data
<b>Viscosity</b>	No data

Section 10. Stability and Reactivity	
<b>Reactivity</b>	Stable
<b>Chemical Stability</b>	Stable
<b>Possibility of Hazardous Reactions</b>	Will not occur
<b>Conditions to Avoid</b>	Exposure to moisture.
<b>Incompatible Materials</b>	Heat is generated when mixed with water. Spattering and boiling can occur. Sulphur acid. Flammable hydrogen gas may be generated from contact with metals such as zinc or sodium. Reaction of bromide impurity with oxidizing metals may generate trace levels of impurities such as bromate.



Manufacturer of Specialty Chemicals

## Safety Data Sheet

<b>Hazardous Decomposition Products</b>	Not expected to decompose under normal conditions of use.
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Section 11. Toxicological Information	
<b>Component Toxicity</b>	<b>LD50 Oral</b> <b>LD50 Dermal</b> <b>LC50 Inhalation</b>
Calcium Chloride	1.0g/kg (Rat)      2.63g/kg (Rabbit)
<b>Likely Routes of Exposure</b>	
<b>Skin:</b>	Prolonged and repeated exposure may cause irritation especially if the skin is damp. May present as a thermal burn.
<b>Eyes:</b>	May cause severe irritation. May cause corneal injury. Effects may be slow to heal.
<b>Inhalation:</b>	Dust may be irritating to the respiratory tract.
<b>Ingestion:</b>	Harmful if ingested in large quantities. May cause digestive tract irritation and ulceration.
<b>Acute Toxicity Estimates (ATE)</b>	Not classified
<b>STOT (Specific Target Organ Toxicity) – Single Exposure</b>	Not classified
<b>Aspiration Toxicity</b>	Not classified
<b>STOT (Specific Target Organ Toxicity) – Repeated</b>	Not classified
<b>Skin Corrosion / Irritation</b>	Corrosive
<b>Serious Eye Damage / Irritation</b>	Corrosive
<b>Respiratory or Skin Sensitization</b>	Not classified
<b>Carcinogenicity</b>	Not listed
<b>Reproductive Toxicity</b>	
- <b>Sexual Function and Fertility</b>	Not classified
- <b>Development of Offspring</b>	Not classified
- <b>Effects on or via Lactation</b>	Not classified
<b>Germ Cell Mutagenicity</b>	Not classified
<b>Interactive Effects</b>	Not classified
<b>Other Information</b>	None known



Manufacturer of Specialty Chemicals

## Safety Data Sheet

<b>Section 12. Ecological Information</b>	
<b>Ecotoxicity</b>	LC50: 10650 mg/L (Lepomis macrochirus)
<b>Persistence and Degradability</b>	Not readily degradable
<b>Bioaccumulative Potential</b>	No data
<b>Biodegradability</b>	No data
<b>Mobility in Soil</b>	Not available
<b>Other Adverse Effects</b>	None

<b>Section 13. Disposal Considerations</b>	
<b>Disposal Considerations</b>	Dispose of contents/container in accordance with local, provincial and federal regulations

<b>Section 14. Transport Information</b>	
<b>UN Number</b>	Not applicable
<b>UN Proper Shipping Name</b>	Not applicable
<b>Transport Hazard Class(es)</b>	Not applicable
<b>Packaging Group</b>	Not applicable
<b>Environmental Hazards</b>	Not applicable
<b>Bulk Transport</b>	Not applicable
<b>Special Precaution</b>	Not applicable
<b>DOT Erg#</b>	Not applicable

<b>Section 15. Regulatory Information</b>	
<b>Canada – DSL Inventory</b>	All components of this product are either on the Domestic Substances List (DSL), Non-Domestic Substances List (NDSL) or exempt
<b>TSCA</b>	All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt
<b>Additional Information</b>	None



Manufacturer of Specialty Chemicals

## Safety Data Sheet

Section 16. Other Information	
<b>NFPA Rating</b>	Health-1/ Flammability-0/Reactivity-0/Special Hazard-Not applicable
<b>HMIS Rating</b>	Health-1/Flammability-0/Reactivity-0/Personal Protection-See Section 8.
<b>Prepared by:</b>	Chemfax Products Ltd., Technical Department
<b>Date Prepared:</b>	27 September, 2012
<b>Date of Latest Revision:</b>	25 January 2021
<b>Disclaimer</b>	
Notice to reader	
<p>To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.</p>	
<p>Chemfax Products Ltd. expressly disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose with respect to the product provided.</p>	



## CDF Bit-Clean

### Extreme pressure lubricant

#### Description

CDF Bit-Clean is a vegetable-based soluble oil developed for the diamond drilling industry. Extreme pressure lubrication properties designed for operating parameters at the face of an impregnated diamond bit for improved penetration rates and extended bit life.

#### Application

CDF Bit-Clean eliminates rod vibration in diamond drilling by producing a soft tenacious film of grease on the drill string and the borehole. The concentrated wetting agents in the product enhance the cooling and wetting of the impregnated diamond particles and accelerate removal of cuttings improving penetration rates and extending bit life. CDF Bit-Clean has proven to be extremely beneficial when encountering sticky clays and shale and is known to improve penetration rates when drilling ultramafic formations.

#### Advantages

- Cost effective, efficient at low concentrations, compatible with existing mud systems, environmentally friendly.
- Improves penetration, Eliminates rod vibration, Enhances the cooling action of the circulating fluid, Produces a fine lubricating film over the metal surfaces.
- Neutralises clay and shale from balling and becoming sticky, Stable in a wide range of water conditions, Improves Drill-Pipe, reamer and bit life and will not contribute to core staining.

#### Typical Properties

Appearance: Translucent amber coloured liquid

pH (10 % solution): 8.5 – 9.0

#### Recommended Treatment

To eliminate vibration and torque in diamond drill holes 2.5 – 5.0kg / 1000-litres.

To retard the stickiness and balling of persistent clays and shale 3.0 – 6.0kg / 1000-litres.

To improve bit and reamer life in extremely hard abrasive ground 3.0 – 8.0kg / 1000-litres.

CDF Bit-Clean mixes very easily to form a stable emulsion.

#### Packaging

20 L pail

*Several factors will dictate the most appropriate concentration rate. Please contact your nearest Canadian Drilling Fluids representative for the best results.*

#### [cdfmud.ca](http://cdfmud.ca)

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## CDF Core-It Pac-L

Fluid Loss Control Agent.

### Description

CDF Core-It PAC L is a new generation, highly dispersive low viscosity polyanionic cellulose polymer used for improving filtration control in most water based drilling fluid systems without appreciably increasing viscosity. CDF Core-It PAC L will not fisheye and has been designed to disperse rapidly into any make-up water even under the poorest conditions. The mixing efficiencies of CDF Core-It PAC L reduces wastage and promotes lower mud costs and total hole costs.

### Application

CDF Core-It PAC L has applications in most drilling mediums and has the ability to improve core recovery in diamond drilling, can be added to enhance a bentonite base system and is compatible with most polymers and lubricants.

### Advantages

- Very economical, Eliminates wastage “no fish eyes”, Easily mixed into low shear environments.
- Effective in fresh, hard and saline environments, Promotes a thin, slick, robust filter cake.
- Controls fluid loss without significantly increasing fluid viscosity, Reduces friction and frequency of differential sticking.
- Compatible with all water based drilling fluid systems polymers and lubricants, Supplements the properties of a bentonite base drilling fluid and Improves core recovery and penetration rates.

### Typical Physical Properties Appearance:

White, free flowing powder  
pH (0.2 % solution): 8.5 – 9.5

### Recommended Treatment

CDF Core-It PAC L is used from 1.0kg – 6.0kg / 1000-litres depending on the nature of the mud system and salt concentration. CDF Core-It PAC L can be slowly introduced into mechanical agitation, through water discharge or through a mud hopper.

*Several factors will dictate the most appropriate concentration rate. Please contact your nearest Canadian Drilling Fluids representative for the best results.*

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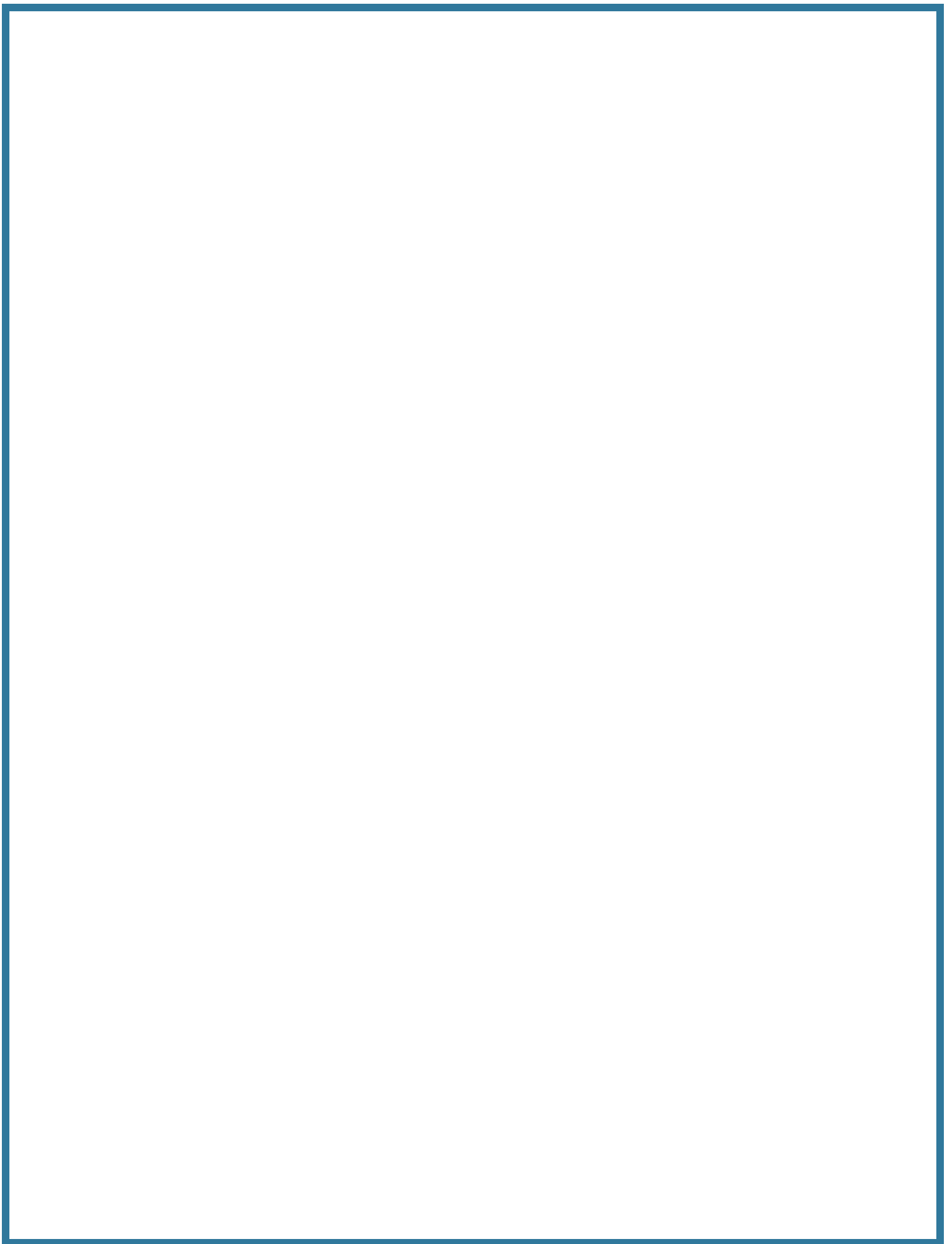
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## CDF Xan-Core

**Biodegradable Viscosifier for fresh, Saline & Salt Brine systems.**

### Description

CDF XAN-CORE is a premium high-quality biopolymer powder designed to provide maximum solids suspension and hole cleaning in vertical and highly deviated holes, and is often used in HDD applications.

XAN-CORE is a distinctive product able to produce a thixotropic shear thinning fluid. XAN-BORE also acts as a very effective mud filtrate Viscosifier.

### Application

CDF XAN-CORE can be blended with a pre-hydrated bentonite based fluid or can be used as a single viscosifying additive in fresh, brackish or saturated salt water. CDF XAN-CORE fluids are highly shear thinning which improves bit cleaning and significantly reduces torque. The fluid will revert to higher viscosities at low shear rates. This unique property provides significant benefits in highly deviated wells and in HDD bores by providing excellent carrying capacity of coarse cuttings, sand and gravel.

### Typical Properties

Appearance: Cream coloured powder

pH (1% solution): 6.0 – 8.0

Specific gravity: 0.65

### Recommended Treatment

CDF Xan-Core - Add 1 – 3 kg / m<sup>3</sup> of water through a mud hopper or a high shear mixer.

*Several factors will dictate the most appropriate concentration rate. Please contact your nearest Canadian Drilling Fluids representative for the best results.*

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# Core Wrap

## Control Chemical (1989)

Chemwatch: 97-00620  
Version No: 6.1  
Safety Data Sheet according to WHMIS 2015 requirements

Issue Date: 13/12/2021  
Print Date: 16/06/2023  
L.GHS.CAN.EN

### SECTION 1 Identification

#### Product Identifier

**Product name:** Core Wrap  
**Chemical Name:** Not Applicable  
**Synonyms:** Not Available  
**Chemical formula:** Not Applicable  
**Other means of identification:** Not Available

#### Recommended use of the chemical and restrictions on use

**Relevant identified uses:** Drilling fluid additive.

#### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	Control Chemical (1989)	Epiroc Customer Center Canada
Address	7016 - 30 Street SE Calgary AB T2C 1N9 Canada	1025 Tristar Drive Mississauga Ontario L5T1L8 Canada
Telephone	+1 403 720 7044 +1 800 267 6840	+1 289 562 0100
Fax	+1 403 720 4951	Not Available
Website	<a href="http://www.matexdrillingfluids.ca/">http://www.matexdrillingfluids.ca/</a>	<a href="http://www.epiroc.com">www.epiroc.com</a>
Email	orders@matexdrillingfluids.ca	midwestcanadamr.mbsknu@epiroc.com

#### Emergency phone number

Association / Organisation	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	+1 867 670 2867
Other emergency telephone numbers	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

Une fois connecté et si le message n'est pas dans votre langue préférée alors s'il vous plaît cadran 07

### SECTION 2 Hazard(s) identification

#### Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

#### Canadian WHMIS Symbols

Classification	Not Applicable
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#### Label elements

##### Hazard pictogram(s)

Not Applicable

**Signal word:** Not Applicable

##### Hazard statement(s)

Not Applicable

##### Physical and Health hazard(s) not otherwise classified

Not Applicable

##### Precautionary statement(s) Prevention

Not Applicable

##### Precautionary statement(s) Response

Not Applicable

##### Precautionary statement(s) Storage

Not Applicable

##### Precautionary statement(s) Disposal

Not Applicable

### SECTION 3 Composition / information on ingredients

**Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
Not Available	100	Ingredients determined not to be hazardous

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

**SECTION 4 First-aid measures****Description of first aid measures****Eye Contact**

If this product comes in contact with eyes:

- Wash out immediately with water.
- If irritation continues, seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

**Skin Contact**

If skin or hair contact occurs:

- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

**Inhalation**

- If fumes, aerosols or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

**Ingestion**

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5 Fire-fighting measures****Extinguishing media**

- There is no restriction on the type of extinguisher which may be used.
- Use extinguishing media suitable for surrounding area.

**Special hazards arising from the substrate or mixture****Fire Incompatibility**

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

**Special protective equipment and precautions for fire-fighters****Fire Fighting**

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves in the event of a fire.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use fire fighting procedures suitable for surrounding area.

**Fire/Explosion Hazard**

- Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions.
- Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions).
- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.

Combustion products include:

carbon monoxide (CO)

carbon dioxide (CO<sub>2</sub>)

other pyrolysis products typical of burning organic material.

**SECTION 6 Accidental release measures****Personal precautions, protective equipment and emergency procedures**

See section 8

**Environmental precautions**

See section 12

**Methods and material for containment and cleaning up****Minor Spills**

- Clean up all spills immediately.
- Avoid contact with skin and eyes.
- Wear impervious gloves and safety glasses.
- Use dry clean up procedures and avoid generating dust.

**Major Spills**

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.
- Control personal contact with the substance, by using protective equipment and dust respirator.

- Prevent spillage from entering drains, sewers or water courses.
- Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 Handling and storage

### Precautions for safe handling

#### Safe handling

- Limit all unnecessary personal contact.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Avoid contact with incompatible materials.
- Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions)
- Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame.
- Establish good housekeeping practices.
- Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.

#### Other information

- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry area protected from environmental extremes.
- Store away from incompatible materials and foodstuff containers.

### Conditions for safe storage, including any incompatibilities

#### Suitable container

- Lined metal can, lined metal pail/ can.
- Plastic pail.
- Polyliner drum.
- Packing as recommended by manufacturer.

#### Storage incompatibility

- Avoid reaction with oxidising agents

## SECTION 8 Exposure controls / personal protection

### Control parameters

#### Occupational Exposure Limits (OEL)

#### INGREDIENT DATA

Not Available

#### MATERIAL DATA

### Exposure controls

#### Appropriate engineering controls

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

#### Individual protection measures, such as personal protective equipment



#### Eye and face protection

- Safety glasses with side shields
- Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience.

#### Skin protection

See Hand protection below

#### Hands/feet protection

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Personal hygiene is a key element of effective hand care.

Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.

- polychloroprene.
- nitrile rubber.
- butyl rubber.

#### Body protection

See Other protection below

#### Other protection

## Core Wrap

No special equipment needed when handling small quantities.

**OTHERWISE:**

- Overalls.
- Barrier cream.
- Eyewash unit.

**SECTION 9 Physical and chemical properties****Information on basic physical and chemical properties**

**Appearance:** White Powder

<b>Physical state</b>	Divided Solid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	No Odour	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Applicable
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	>350	<b>Viscosity (cSt)</b>	Not Applicable
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	Not Applicable	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Applicable	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Applicable	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Applicable
<b>Lower Explosive Limit (%)</b>	Not Applicable	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Applicable	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Miscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Applicable	<b>VOC g/L</b>	Not Available

**SECTION 10 Stability and reactivity**

**Reactivity:** See section 7

**Chemical stability :**

- Unstable in the presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

**Possibility of hazardous reactions :** See section 7

**Conditions to avoid :** See section 7

**Incompatible materials :** See section 7

**Hazardous decomposition products :** See section 5

**SECTION 11 Toxicological information****Information on toxicological effects****Inhaled**

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

If prior damage to the circulatory or nervous systems has occurred or if kidney damage has been sustained, proper screenings should be conducted on individuals who may be exposed to further risk if handling and use of the material result in excessive exposures.

**Ingestion**

The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health).

**Skin Contact**

The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.

**Eye**

Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result. The material may produce foreign body irritation in certain individuals.

**Chronic**

Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Long term exposure to high dust concentrations may cause changes in lung function (i.e. pneumoconiosis) caused by particles less than 0.5 micron penetrating and remaining in the lung. A prime symptom is breathlessness. Lung shadows show on X-ray.

Core Wrap	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available

**Legend:** 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

<b>Acute Toxicity</b>	✘	<b>Carcinogenicity</b>	✘
<b>Skin Irritation/Corrosion</b>	✘	<b>Reproductivity</b>	✘

## Core Wrap

Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

## Legend:

- ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## SECTION 12 Ecological information

## Toxicity

Core Wrap	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available

**Legend:** Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

**DO NOT discharge into sewer or waterways.**

## Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

## Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

## Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

## SECTION 13 Disposal considerations

## Waste treatment methods

## Product / Packaging disposal

- **DO NOT allow wash water from cleaning or process equipment to enter drains.**
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.

## SECTION 14 Transport information

## Labels Required

## Marine Pollutant

NO

	Land transport (TDG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS	Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS	Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
UN number: <b>Not Applicable</b>			
UN proper shipping name: <b>Not Applicable</b>			
Transport hazard class(es): <b>Not Applicable</b>			
Subsidiary risk: <b>Not Applicable</b>			
Packing group: <b>Not Applicable</b>			

## Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code

Product name	Group

## Transport in bulk in accordance with the IGC Code

Product name	Ship Type

## SECTION 15 Regulatory information

## Safety, health and environmental regulations / legislation specific for the substance or mixture

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

## National Inventory Status

National Inventory	Status
Australia - AIIC / Australia Non-Industrial Use	Not Available
Canada - DSL	Not Available
Canada - NDSL	Not Available
China - IECSC	Not Available
Europe - EINEC / ELINCS / NLP	Not Available
Japan - ENCS	Not Available
Korea - KECI	Not Available
New Zealand - NZIoC	Not Available
Philippines - PICCS	Not Available
USA - TSCA	Not Available
Mexico - INSQ	Not Available
Vietnam - NCI	Not Available
Russia - FBEPH	Not Available
<b>Legend:</b>	<p>Yes = All CAS declared ingredients are on the inventory</p> <p>No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.</p>

## SECTION 16 Other information

**Revision Date:** 13/12/2021

**Initial Date:** 28/04/2021

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

### Definitions and abbreviations

PC - TWA: Permissible Concentration-Time Weighted Average  
 PC - STEL: Permissible Concentration-Short Term Exposure Limit  
 IARC: International Agency for Research on Cancer  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 STEL: Short Term Exposure Limit  
 TEEL: Temporary Emergency Exposure Limit  
 IDLH: Immediately Dangerous to Life or Health Concentrations  
 ES: Exposure Standard  
 OSF: Odour Safety Factor  
 NOAEL :No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value  
 LOD: Limit Of Detection  
 OTV: Odour Threshold Value  
 BCF: BioConcentration Factors  
 BEI: Biological Exposure Index  
 AIIC: Australian Inventory of Industrial Chemicals  
 DSL: Domestic Substances List  
 NDSL: Non-Domestic Substances List  
 IECSC: Inventory of Existing Chemical Substance in China  
 EINECS: European Inventory of Existing Commercial chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 NLP: No-Longer Polymers  
 ENCS: Existing and New Chemical Substances Inventory  
 KECI: Korea Existing Chemicals Inventory  
 NZIoC: New Zealand Inventory of Chemicals  
 PICCS: Philippine Inventory of Chemicals and Chemical Substances  
 TSCA: Toxic Substances Control Act  
 TCSI: Taiwan Chemical Substance Inventory  
 INSQ: Inventario Nacional de Sustancias Químicas  
 NCI: National Chemical Inventory  
 FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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TEL (+61 3) 9572 4700.

# DD 955

## Control Chemical (1989)

Chemwatch: 603-206

Version No: 5.1

Safety Data Sheet according to WHMIS 2015 requirements

Issue Date: 15/12/2021

Print Date: 16/06/2023

L.GHS.CAN.EN

### SECTION 1 Identification

#### Product Identifier

**Product name:** DD 955

**Chemical Name:** Not Applicable

**Synonyms:** Not Available

**Chemical formula:** Not Applicable

**Other means of identification:** Not Available

#### Recommended use of the chemical and restrictions on use

**Relevant identified uses:** Drilling additive - Forage additive - Perforación additive.

#### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	Control Chemical (1989)	Epiroc Drilling Tools AB
Address	7016 - 30 Street SE Calgary AB T2C 1N9 Canada	Box 521 Fagersta 73275 Sweden
Telephone	+1 403 720 7044 +1 800 267 6840	+46 233 46100
Fax	+1 403 720 4951	Not Available
Website	<a href="http://www.matexdrillingfluids.ca/">http://www.matexdrillingfluids.ca/</a>	<a href="http://www.epiroc.com/sds">www.epiroc.com/sds</a>
Email	orders@matexdrillingfluids.ca	fredrik.gransell@epiroc.com

#### Emergency phone number

Association / Organisation	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	+1 867 670 2867
Other emergency telephone numbers	+61 3 9573 3188

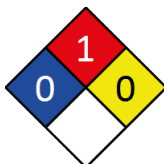
Once connected and if the message is not in your preferred language then please dial 01

Une fois connecté et si le message n'est pas dans votre langue préférée alors s'il vous plaît cadran 07

### SECTION 2 Hazard(s) identification

#### Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

#### Canadian WHMIS Symbols

Classification	Not Applicable
----------------	----------------

#### Label elements

##### Hazard pictogram(s)

Not Applicable

**Signal word:** Not Applicable

##### Hazard statement(s)

Not Applicable

##### Physical and Health hazard(s) not otherwise classified

Not Applicable

##### Precautionary statement(s) Prevention

Not Applicable

##### Precautionary statement(s) Response

Not Applicable

##### Precautionary statement(s) Storage

Not Applicable

##### Precautionary statement(s) Disposal

Not Applicable

### SECTION 3 Composition / information on ingredients

## Substances

See section below for composition of Mixtures

### Mixtures

CAS No	%[weight]	Name
64742-47-8	20-45	<u>distillates_petroleum_light_hydro-treated</u>
69011-36-5	1-5	<u>tridecanol_branched_ethoxylated</u>

## SECTION 4 First-aid measures

### Description of first aid measures

#### Eye Contact

If this product comes in contact with the eyes:

- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

#### Skin Contact

If skin contact occurs:

- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

#### Inhalation

- If fumes, aerosols or combustion products are inhaled remove from contaminated area.
- Other measures are usually unnecessary.

#### Ingestion

- Immediately give a glass of water.
- First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.
- If spontaneous vomiting appears imminent or occurs, hold patient's head down, lower than their hips to help avoid possible aspiration of vomitus.

### Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

## SECTION 5 Fire-fighting measures

### Extinguishing media

- Foam.
- Dry chemical powder.
- Carbon dioxide.
- Water spray or fog - Large fires only.

### Special hazards arising from the substrate or mixture

#### Fire Incompatibility

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

### Special protective equipment and precautions for fire-fighters

#### Fire Fighting

- Alert Fire Brigade and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.
- Prevent, by any means available, spillage from entering drains or water course.
- Use water delivered as a fine spray to control fire and cool adjacent area.

#### Fire/Explosion Hazard

- Combustible.
- Slight fire hazard when exposed to heat or flame.
- Heating may cause expansion or decomposition leading to violent rupture of containers.
- On combustion, may emit toxic fumes of carbon monoxide (CO).

Combustion products include:

carbon dioxide (CO<sub>2</sub>)

other pyrolysis products typical of burning organic material.

May emit corrosive fumes.

## SECTION 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

#### Minor Spills

- Remove all ignition sources.
- Clean up all spills immediately.
- Avoid breathing vapours and contact with skin and eyes.
- Control personal contact with the substance, by using protective equipment.

#### Major Spills

Moderate hazard.

- Clear area of personnel and move upwind.
- Alert Fire Brigade and tell them location and nature of hazard.

- Wear breathing apparatus plus protective gloves.
- Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 Handling and storage

### Precautions for safe handling

#### Safe handling

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.

#### Other information

- Store in original containers.
- Keep containers securely sealed.
- No smoking, naked lights or ignition sources.
- Store in a cool, dry, well-ventilated area.

### Conditions for safe storage, including any incompatibilities

#### Suitable container

- Metal can or drum
- Packaging as recommended by manufacturer.
- Check all containers are clearly labelled and free from leaks.

#### Storage incompatibility

- Avoid reaction with oxidising agents

## SECTION 8 Exposure controls / personal protection

### Control parameters

#### Occupational Exposure Limits (OEL)

#### INGREDIENT DATA

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Canada - Yukon Permissible Concentrations for Airborne Contaminant Substances	distillates, petroleum, light, hydrotreated	Oil mist, mineral	5 mg/m3	10 mg/m3	Not Available	Not Available
Canada - Saskatchewan Occupational Health and Safety Regulations - Contamination Limits	distillates, petroleum, light, hydrotreated	Oil mist, mineral	5 mg/m3	10 mg/m3	Not Available	Not Available
Canada - Manitoba Occupational Exposure Limits	distillates, petroleum, light, hydrotreated	Not Available	Not Available	Not Available	Not Available	TLV® Basis: URT irr
Canada - Manitoba Occupational Exposure Limits	distillates, petroleum, light, hydrotreated	Not Available	5 mg/m3	Not Available	Not Available	TLV® Basis: URT irr
Canada - Prince Edward Island Occupational Exposure Limits	distillates, petroleum, light, hydrotreated	Mineral oil, excluding metal working fluids - Pure, highly and severely refined	5 mg/m3	Not Available	Not Available	TLV® Basis: URT irr
Canada - Prince Edward Island Occupational Exposure Limits	distillates, petroleum, light, hydrotreated	Mineral oil, excluding metal working fluids - Poorly and mildly refined	Not Available	Not Available	Not Available	TLV® Basis: URT irr
Canada - British Columbia Occupational Exposure Limits	distillates, petroleum, light, hydrotreated	Oil mist - mineral, mildly refined	0.2 mg/m3	Not Available	Not Available	Not Available
Canada - British Columbia Occupational Exposure Limits	distillates, petroleum, light, hydrotreated	Oil mist - mineral, severely refined	1 mg/m3	Not Available	Not Available	Not Available
Canada - Nova Scotia Occupational Exposure Limits	distillates, petroleum, light, hydrotreated	Jet fuels	200 mg/m3	Not Available	Not Available	Measured as total hydrocarbon vapor. TLV Basis: skin irritation; CNS impairment; upper respiratory tract irritation TLV Basis/Critical Effect(s): Irritation; CNS; skin. Application restricted to conditions in which there are negligible aerosol exposures.
Canada - Nova Scotia Occupational Exposure Limits	distillates, petroleum, light, hydrotreated	Oil mist - mineral	5 mg/m3	10 mg/m3	Not Available	TLV Basis: lung. As sampled by method that does not collect vapor.
Canada - Alberta Occupational Exposure Limits	distillates, petroleum, light, hydrotreated	Oil mist, mineral	5 mg/m3	10 mg/m3	Not Available	Not Available
Canada - Northwest Territories Occupational Exposure Limits	distillates, petroleum, light, hydrotreated	Oil mist, mineral	5 mg/m3	10 mg/m3	Not Available	Not Available
Canada - Quebec Permissible Exposure Values for Airborne Contaminants	distillates, petroleum, light, hydrotreated	Mineral oil (mist): Little or unrefined	Not Available	Not Available	Not Available	C2: carcinogenic effect suspected in humans EM: A substance to which exposure must be reduced to a minimum RP: A substance which may not be recirculated

Source	Ingredient	Material name	TWA	STEL	Peak	Notes
Canada - Quebec Permissible Exposure Values for Airborne Contaminants	distillates, petroleum, light, hydrotreated	Mineral oil (mist): Pure, highly and ultra-refined - inhalable dust	5 mg/m3	Not Available	Not Available	Not Available

**Occupational Exposure Banding**

Ingredient	Occupational Exposure Band Rating	Occupational Exposure Band Limit
tridecanol, branched, ethoxylated	E	≤ 0.1 ppm
<b>Notes:</b>	<i>Occupational exposure banding is a process of assigning chemicals into specific categories or bands based on a chemical's potency and the adverse health outcomes associated with exposure. The output of this process is an occupational exposure band (OEB), which corresponds to a range of exposure concentrations that are expected to protect worker health.</i>	

**MATERIAL DATA****Exposure controls****Appropriate engineering controls**

Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.

The basic types of engineering controls are:

Process controls which involve changing the way a job activity or process is done to reduce the risk.

Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment.

**Individual protection measures, such as personal protective equipment****Eye and face protection**

- Safety glasses with side shields.
- Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task.

**Skin protection**

See Hand protection below

**Hands/feet protection**

- Wear chemical protective gloves, e.g. PVC.
- Wear safety footwear or safety gumboots, e.g. Rubber

The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.

Personal hygiene is a key element of effective hand care.

**Body protection**

See Other protection below

**Other protection**

- Overalls.
- P.V.C apron.
- Barrier cream.
- Skin cleansing cream.

**SECTION 9 Physical and chemical properties****Information on basic physical and chemical properties**

**Appearance:** Light brown liquid.

<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	0.98
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	Not Available	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	Not Available	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	>93.3 (CC)	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Not Available	<b>pH as a solution (1%)</b>	7-9 (0.6%)
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

**SECTION 10 Stability and reactivity**

**Reactivity:** See section 7

**Chemical stability :**

- Unstable in the presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

**Possibility of hazardous reactions :** See section 7

**Conditions to avoid :** See section 7

**Incompatible materials :** See section 7

**Hazardous decomposition products :** See section 5

## SECTION 11 Toxicological information

### Information on toxicological effects

#### Inhaled

The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.

Inhalation hazard is increased at higher temperatures.

Inhalation of vapours may cause drowsiness and dizziness. This may be accompanied by narcosis, reduced alertness, loss of reflexes, lack of coordination and vertigo.

High inhaled concentrations of mixed hydrocarbons may produce narcosis characterised by nausea, vomiting and lightheadedness. Inhalation of aerosols may produce severe pulmonary oedema, pneumonitis and pulmonary haemorrhage. Inhalation of petroleum hydrocarbons consisting substantially of low molecular weight species (typically C2-C12) may produce irritation of mucous membranes, incoordination, giddiness, nausea, vertigo, confusion, headache, appetite loss, drowsiness, tremors and anaesthetic stupor. Massive exposures may produce central nervous system depression with sudden collapse and deep coma; fatalities have been recorded.

Central nervous system (CNS) depression may include nonspecific discomfort, symptoms of giddiness, headache, dizziness, nausea, anaesthetic effects, slowed reaction time, slurred speech and may progress to unconsciousness. Serious poisonings may result in respiratory depression and may be fatal.

Acute effects from inhalation of high concentrations of vapour are pulmonary irritation, including coughing, with nausea; central nervous system depression - characterised by headache and dizziness, increased reaction time, fatigue and loss of co-ordination

#### Ingestion

The material has **NOT** been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence. The material may still be damaging to the health of the individual, following ingestion, especially where pre-existing organ (e.g liver, kidney) damage is evident. Present definitions of harmful or toxic substances are generally based on doses producing mortality rather than those producing morbidity (disease, ill-health).

Ingestion of petroleum hydrocarbons may produce irritation of the pharynx, oesophagus, stomach and small intestine with oedema and mucosal ulceration resulting; symptoms include a burning sensation in the mouth and throat. Large amounts may produce narcosis with nausea and vomiting, weakness or dizziness, slow and shallow respiration, swelling of the abdomen, unconsciousness and convulsions. Myocardial injury may produce arrhythmias, ventricular fibrillation and electrocardiographic changes. Central nervous system depression may also occur.

#### Skin Contact

Open cuts, abraded or irritated skin should not be exposed to this material

The liquid may be miscible with fats or oils and may degrease the skin, producing a skin reaction described as non-allergic contact dermatitis. The material is unlikely to produce an irritant dermatitis as described in EC Directives .

The material may accentuate any pre-existing dermatitis condition

Entry into the blood-stream through, for example, cuts, abrasions, puncture wounds or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

#### Eye

Limited evidence exists, or practical experience suggests, that the material may cause eye irritation in a substantial number of individuals and/or is expected to produce significant ocular lesions which are present twenty-four hours or more after instillation into the eye(s) of experimental animals. Repeated or prolonged eye contact may cause inflammation characterised by temporary redness (similar to windburn) of the conjunctiva (conjunctivitis); temporary impairment of vision and/or other transient eye damage/ulceration may occur.

Petroleum hydrocarbons may produce pain after direct contact with the eyes. Slight, but transient disturbances of the corneal epithelium may also result. The aromatic fraction may produce irritation and lachrymation.

#### Chronic

Long-term exposure to the product is not thought to produce chronic effects adverse to health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Repeated or prolonged exposure to mixed hydrocarbons may produce narcosis with dizziness, weakness, irritability, concentration and/or memory loss, tremor in the fingers and tongue, vertigo, olfactory disorders, constriction of visual field, paraesthesias of the extremities, weight loss and anaemia and degenerative changes in the liver and kidney. Chronic exposure by petroleum workers, to the lighter hydrocarbons, has been associated with visual disturbances, damage to the central nervous system, peripheral neuropathies (including numbness and paraesthesias), psychological and neurophysiological deficits, bone marrow toxicities (including hypoplasia possibly due to benzene) and hepatic and renal involvement. Chronic dermal exposure to petroleum hydrocarbons may result in defatting which produces localised dermatoses. Surface cracking and erosion may also increase susceptibility to infection by microorganisms.

DD 955	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
distillates, petroleum, light, hydrotreated	<b>TOXICITY</b>	<b>IRRITATION</b>
	Dermal (rabbit) LD50: >2000 mg/kg <sup>[2]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
	Inhalation(Rat) LC50: >4.3 mg/4h <sup>[1]</sup>	Skin: adverse effect observed (irritating) <sup>[1]</sup>
	Oral (Rat) LD50: >5000 mg/kg <sup>[2]</sup>	
tridecanol, branched, ethoxylated	<b>TOXICITY</b>	<b>IRRITATION</b>
	dermal (rat) LD50: >2000 mg/kg <sup>[1]</sup>	Eye (rabbit): irritant *
	Oral (Rat) LD50: 1080 mg/kg <sup>[2]</sup>	Eye: no adverse effect observed (not irritating) <sup>[1]</sup>
		Skin (rabbit): non-irritating *
		Skin: no adverse effect observed (not irritating) <sup>[1]</sup>

**Legend:** 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

**DISTILLATES, PETROLEUM, LIGHT, HYDROTREATED**

No significant acute toxicological data identified in literature search.

Studies indicate that normal, branched and cyclic paraffins are absorbed from the mammalian gastrointestinal tract and that the absorption of n-paraffins is inversely proportional to the carbon chain length, with little absorption above C30. With respect to the carbon chain lengths likely to be present in mineral oil, n-paraffins may be absorbed to a greater extent than iso- or cyclo-paraffins.

The major classes of hydrocarbons have been shown to be well absorbed by the gastrointestinal tract in various species. In many cases, the hydrophobic hydrocarbons are ingested in association with dietary lipids. The dependence of hydrocarbon absorption on concomitant triglyceride digestion and absorption, is known as the "hydrocarbon continuum hypothesis", and asserts that a series of solubilising phases in the intestinal lumen, created by dietary triglycerides and their digestion products, afford hydrocarbons a route to the lipid phase of the intestinal absorptive cell (enterocyte) membrane.

For "kerosenes"

**Acute toxicity:** Oral LD50s for three kerosenes (Jet A, CAS No. 8008-20-6 and CAS No. 64742-81-0) ranged from > 2 to >20 g/kg. The dermal LD50s of the same three kerosenes were all >2.0 g/kg. Inhalation LC50 values in Sprague-Dawley rats for straight run kerosene (CAS No. 8008-20-6) and hydrodesulfurised kerosene (CAS No. 64742-81-0) were reported to be > 5 and > 5.2 mg/l, respectively. No mortalities in rats were reported in rats when exposed for eight hours to saturated vapor of deodorised kerosene (probably a desulfurised kerosene). Six hour exposures of cats to the same material produced an LC50 of >6.4 mg/l

When tested in rabbits for skin irritation, straight run kerosene (CAS No. 8008-20-6) produced "moderate" to "severe" irritation.

**TRIDECANOL, BRANCHED, ETHOXYLATED**

\* [BASF Canada]

Human beings have regular contact with alcohol ethoxylates through a variety of industrial and consumer products such as soaps, detergents, and other cleaning products. Exposure to these chemicals can occur through ingestion, inhalation, or contact with the skin or eyes. Studies of acute toxicity show that volumes well above a reasonable intake level would have to occur to produce any toxic response. Moreover, no fatal case of poisoning with alcohol ethoxylates has ever been reported.

Alcohol ethoxylates are according to CESIO (2000) classified as Irritant or Harmful depending on the number of EO-units:

EO < 5 gives Irritant (Xi) with R38 (Irritating to skin) and R41 (Risk of serious damage to eyes)

EO > 5-15 gives Harmful (Xn) with R22 (Harmful if swallowed) - R38/41

EO > 15-20 gives Harmful (Xn) with R22-41

>20 EO is not classified (CESIO 2000)

Oxo-AE, C13 EO10 and C13 EO15, are Irritating (Xi) with R36/38 (Irritating to eyes and skin).

AE are not included in Annex 1 of the list of dangerous substances of the Council Directive 67/548/EEC

In general, alcohol ethoxylates (AE) are readily absorbed through the skin of guinea pigs and rats and through the gastrointestinal mucosa of rats. AE are quickly eliminated from the body through the urine, faeces, and expired air (CO<sub>2</sub>). Orally dosed AE was absorbed rapidly and extensively in rats, and more than 75% of the dose was absorbed. When applied to the skin of humans, the doses were absorbed slowly and incompletely (50% absorbed in 72 hours). Half of the absorbed surfactant was excreted promptly in the urine and smaller amounts of AE appeared in the faeces and expired air (CO<sub>2</sub>).

Acute Toxicity	✘	Carcinogenicity	✘
Skin Irritation/Corrosion	✘	Reproductivity	✘
Serious Eye Damage/Irritation	✘	STOT - Single Exposure	✘
Respiratory or Skin sensitisation	✘	STOT - Repeated Exposure	✘
Mutagenicity	✘	Aspiration Hazard	✘

**Legend:**

- ✘ – Data either not available or does not fill the criteria for classification  
 ✔ – Data available to make classification

**SECTION 12 Ecological information****Toxicity**

DD 955	Endpoint	Test Duration (hr)	Species	Value	Source
	Not Available	Not Available	Not Available	Not Available	Not Available

distillates, petroleum, light, hydrotreated	Endpoint	Test Duration (hr)	Species	Value	Source
	NOEC(ECx)	3072h	Fish	1mg/l	1
	LC50	96h	Fish	2.2mg/l	4

tridecanol, branched, ethoxylated	Endpoint	Test Duration (hr)	Species	Value	Source
	EC50(ECx)	48h	Crustacea	1-10mg/l	Not Available
	LC50	96h	Fish	2.3mg/l	Not Available
	EC50	72h	Algae or other aquatic plants	1-10mg/l	Not Available
	EC50	48h	Crustacea	1-10mg/l	Not Available

**Legend:** 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

**Persistence and degradability**

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

**Bioaccumulative potential**

Ingredient	Bioaccumulation
distillates, petroleum, light, hydrotreated	LOW (BCF = 159)

**Mobility in soil**

Ingredient	Mobility
	No Data available for all ingredients

**SECTION 13 Disposal considerations**

**Waste treatment methods****Product / Packaging disposal**

Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked.

A Hierarchy of Controls seems to be common - the user should investigate:

- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use.

- **DO NOT allow wash water from cleaning or process equipment to enter drains.**
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
- Recycle wherever possible or consult manufacturer for recycling options.
- Consult State Land Waste Authority for disposal.
- Bury or incinerate residue at an approved site.
- Recycle containers if possible, or dispose of in an authorised landfill.

**SECTION 14 Transport information****Labels Required****Marine Pollutant**

NO

	Land transport (TDG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS	Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS	Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS
UN number: <b>Not Applicable</b>			
UN proper shipping name: <b>Not Applicable</b>			
Transport hazard class(es): <b>Not Applicable</b>			
Subsidiary risk: <b>Not Applicable</b>			
Packing group: <b>Not Applicable</b>			

**Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
distillates, petroleum, light, hydrotreated	Not Available
tridecanol, branched, ethoxylated	Not Available

**Transport in bulk in accordance with the IGC Code**

Product name	Ship Type
distillates, petroleum, light, hydrotreated	Not Available
tridecanol, branched, ethoxylated	Not Available

**SECTION 15 Regulatory information****Safety, health and environmental regulations / legislation specific for the substance or mixture**

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

**distillates, petroleum, light, hydrotreated is found on the following regulatory lists**

- Canada Categorization decisions for all DSL substances
- Canada Domestic Substances List (DSL)
- Canada Toxicological Index Service - Workplace Hazardous Materials Information System - WHMIS GHS
- Chemical Footprint Project - Chemicals of High Concern List
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Group 1: Carcinogenic to humans
- International Agency for Research on Cancer (IARC) - Agents Classified by the IARC Monographs - Not Classified as Carcinogenic

**tridecanol, branched, ethoxylated is found on the following regulatory lists**

- Canada Categorization decisions for all DSL substances
- Canada Domestic Substances List (DSL)

**National Inventory Status**

National Inventory	Status
Australia - AIIIC / Australia Non-Industrial Use	Yes
Canada - DSL	Yes
Canada - NDSL	No (distillates, petroleum, light, hydrotreated; tridecanol, branched, ethoxylated)
China - IECSC	Yes

National Inventory	Status
Europe - EINEC / ELINCS / NLP	Yes
Japan - ENCS	Yes
Korea - KECI	Yes
New Zealand - NZIoC	Yes
Philippines - PICCS	Yes
USA - TSCA	Yes
Mexico - INSQ	No (tridecanol, branched, ethoxylated)
Vietnam - NCI	Yes
Russia - FBEPH	Yes
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

## SECTION 16 Other information

**Revision Date:** 15/12/2021

**Initial Date:** 01/05/2021

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

### Definitions and abbreviations

PC - TWA: Permissible Concentration-Time Weighted Average  
 PC - STEL: Permissible Concentration-Short Term Exposure Limit  
 IARC: International Agency for Research on Cancer  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 STEL: Short Term Exposure Limit  
 TEEL: Temporary Emergency Exposure Limit  
 IDLH: Immediately Dangerous to Life or Health Concentrations  
 ES: Exposure Standard  
 OSF: Odour Safety Factor  
 NOAEL :No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value  
 LOD: Limit Of Detection  
 OTV: Odour Threshold Value  
 BCF: BioConcentration Factors  
 BEI: Biological Exposure Index  
 AIIC: Australian Inventory of Industrial Chemicals  
 DSL: Domestic Substances List  
 NDSL: Non-Domestic Substances List  
 IECSC: Inventory of Existing Chemical Substance in China  
 EINECS: European INventory of Existing Commercial chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 NLP: No-Longer Polymers  
 ENCS: Existing and New Chemical Substances Inventory  
 KECI: Korea Existing Chemicals Inventory  
 NZIoC: New Zealand Inventory of Chemicals  
 PICCS: Philippine Inventory of Chemicals and Chemical Substances  
 TSCA: Toxic Substances Control Act  
 TCSI: Taiwan Chemical Substance Inventory  
 INSQ: Inventario Nacional de Sustancias Químicas  
 NCI: National Chemical Inventory  
 FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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TEL (+61 3) 9572 4700.



## DD2000

### Fordia

Chemwatch: 5481-08

Version No: 4.1

Safety Data Sheet according to WHMIS 2015 requirements

Issue Date: 14/04/2022

Print Date: 16/06/2023

S.GHS.CAN.EN.E

## SECTION 1 Identification

### Product Identifier

Product name	DD2000
Chemical Name	Not Applicable
Synonyms	Not Available
Chemical formula	Not Applicable
Other means of identification	9469709658

### Recommended use of the chemical and restrictions on use

Relevant identified uses	Drilling fluid additive.
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### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	Fordia	Control Chemical (1989)
Address	3, Hôtel-de-Ville, Dollard-des-Ormeaux QC H9B 3G4 Canada	7016 - 30 Street SE, Calgary AB T2C 1N9 Canada
Telephone	+1 514 336 9211 +1 800 768 7274	+1 403 720 7044 +1 800 267 6840
Fax	Not Available	+1 403 720 4951
Website	<a href="http://www.fordia.com">www.fordia.com</a>	<a href="http://www.matexdrillingfluids.ca/">http://www.matexdrillingfluids.ca/</a>
Email	info@fordia.com	orders@matexdrillingfluids.ca

### Emergency phone number

Association / Organisation	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	+1 867 670 2867
Other emergency telephone numbers	+61 3 9573 3188

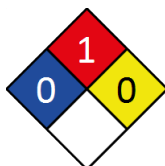
Once connected and if the message is not in your preferred language then please dial 01

Une fois connecté et si le message n'est pas dans votre langue préférée alors s'il vous plaît cadran 07

## SECTION 2 Hazard(s) identification

### Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

### Canadian WHMIS Symbols

Classification	Not Applicable
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### Label elements

Hazard pictogram(s)	Not Applicable
Signal word	Not Applicable

**Hazard statement(s)**

Not Applicable

**Physical and Health hazard(s) not otherwise classified**

Not Applicable

**Precautionary statement(s) Prevention**

Not Applicable

**Precautionary statement(s) Response**

Not Applicable

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

**SECTION 3 Composition / information on ingredients****Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
Not Available	100	Ingredients determined not to be hazardous

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

**SECTION 4 First-aid measures****Description of first aid measures**

<b>Eye Contact</b>	If this product comes in contact with eyes: <ul style="list-style-type: none"> <li>▶ Wash out immediately with water.</li> <li>▶ If irritation continues, seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	If skin or hair contact occurs: <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5 Fire-fighting measures****Extinguishing media**

- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ Carbon dioxide.
- ▶ Water spray or fog - Large fires only.

**Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
-----------------------------	--

**Special protective equipment and precautions for fire-fighters**

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ Avoid spraying water onto liquid pools.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Non combustible.</li> <li>▶ Not considered to be a significant fire risk.</li> <li>▶ Expansion or decomposition on heating may lead to violent rupture of containers.</li> <li>▶ Decomposes on heating and may produce toxic fumes of carbon monoxide (CO).</li> <li>▶ May emit acrid smoke.</li> </ul> Decomposes on heating and produces: carbon dioxide (CO <sub>2</sub> ) nitrogen oxides (NO <sub>x</sub> ) other pyrolysis products typical of burning organic material.

## SECTION 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Increase ventilation.</li> <li>▶ Stop leak if safe to do so.</li> <li>▶ Contain spill with sand, earth or vermiculite.</li> <li>▶ Collect recoverable product into labelled containers for recycling.</li> <li>▶ Absorb remaining product with sand, earth or vermiculite.</li> <li>▶ Collect solid residues and seal in labelled drums for disposal.</li> <li>▶ Wash area and prevent runoff into drains.</li> <li>▶ If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 Handling and storage

### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>▶ Avoid smoking, naked lights or ignition sources.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ When handling, <b>DO NOT eat, drink or smoke.</b></li> <li>▶ Keep containers securely sealed when not in use.</li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> <li>▶ Protect containers against physical damage and check regularly for leaks.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>

### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Metal can or drum</li> <li>▶ Packaging as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Avoid reaction with oxidising agents</li> </ul>

## SECTION 8 Exposure controls / personal protection

### Control parameters

Occupational Exposure Limits (OEL)

INGREDIENT DATA

Not Available


Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
DD2000	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
DD2000	Not Available	Not Available

Continued...

## Exposure controls

<p><b>Appropriate engineering controls</b></p>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p> <table border="1"> <thead> <tr> <th>Type of Contaminant:</th> <th>Air Speed:</th> </tr> </thead> <tbody> <tr> <td>solvent, vapours, degreasing etc., evaporating from tank (in still air)</td> <td>0.25-0.5 m/s (50-100 f/min)</td> </tr> <tr> <td>aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)</td> <td>0.5-1 m/s (100-200 f/min.)</td> </tr> <tr> <td>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td> <td>1-2.5 m/s (200-500 f/min)</td> </tr> <tr> <td>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</td> <td>2.5-10 m/s (500-2000 f/min.)</td> </tr> </tbody> </table> <p>Within each range the appropriate value depends on:</p> <table border="1"> <thead> <tr> <th>Lower end of the range</th> <th>Upper end of the range</th> </tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> <tr> <td>4: Large hood or large air mass in motion</td> <td>4: Small hood - local control only</td> </tr> </tbody> </table> <p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p>	Type of Contaminant:	Air Speed:	solvent, vapours, degreasing etc., evaporating from tank (in still air)	0.25-0.5 m/s (50-100 f/min)	aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)	direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min)	grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)	Lower end of the range	Upper end of the range	1: Room air currents minimal or favourable to capture	1: Disturbing room air currents	2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity	3: Intermittent, low production.	3: High production, heavy use	4: Large hood or large air mass in motion	4: Small hood - local control only
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Lower end of the range	Upper end of the range																				
1: Room air currents minimal or favourable to capture	1: Disturbing room air currents																				
2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity																				
3: Intermittent, low production.	3: High production, heavy use																				
4: Large hood or large air mass in motion	4: Small hood - local control only																				
<p><b>Individual protection measures, such as personal protective equipment</b></p>																					
<p><b>Eye and face protection</b></p>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields</li> <li>▶ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].</li> </ul>																				
<p><b>Skin protection</b></p>	<p>See Hand protection below</p>																				
<p><b>Hands/feet protection</b></p>	<p>Wear general protective gloves, eg. light weight rubber gloves.</p> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> <li>· frequency and duration of contact,</li> <li>· chemical resistance of glove material,</li> <li>· glove thickness and</li> <li>· dexterity</li> </ul> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> <li>· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>· Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.</li> <li>· Contaminated gloves should be replaced.</li> </ul> <p>As defined in ASTM F-739-96 in any application, gloves are rated as:</p> <ul style="list-style-type: none"> <li>· Excellent when breakthrough time &gt; 480 min</li> <li>· Good when breakthrough time &gt; 20 min</li> <li>· Fair when breakthrough time &lt; 20 min</li> <li>· Poor when glove material degrades</li> </ul> <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.</p> <p>It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation</p>																				

	<p>efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.</p> <p>Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> <li>· Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.</li> <li>· Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential</li> </ul> <p>Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<p>No special equipment needed when handling small quantities.</p> <p><b>OTHERWISE:</b></p> <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ Barrier cream.</li> <li>▶ Eyewash unit.</li> </ul>

### Respiratory protection

Type A-P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

- ▶ Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- ▶ The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- ▶ Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

## SECTION 9 Physical and chemical properties

### Information on basic physical and chemical properties

<b>Appearance</b>	Divided Solid		
<b>Physical state</b>	Divided Solid	<b>Relative density (Water = 1)</b>	0.75
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Applicable
<b>pH (as supplied)</b>	Not Applicable	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	Not Available	<b>Viscosity (cSt)</b>	Not Applicable
<b>Initial boiling point and boiling range (°C)</b>	Not Applicable	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	>93.3	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Applicable	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Applicable
<b>Lower Explosive Limit (%)</b>	Not Applicable	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Applicable	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Miscible	<b>pH as a solution (1%)</b>	3-5 (0.5%)
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

## SECTION 10 Stability and reactivity

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 Toxicological information

### Information on toxicological effects

<b>Inhaled</b>	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
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<b>Ingestion</b>	The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.	
<b>Skin Contact</b>	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.	
<b>Eye</b>	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).	
<b>Chronic</b>	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.	
<b>DD2000</b>	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available
<b>Legend:</b>	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

<b>Acute Toxicity</b>	✗	<b>Carcinogenicity</b>	✗
<b>Skin Irritation/Corrosion</b>	✗	<b>Reproductivity</b>	✗
<b>Serious Eye Damage/Irritation</b>	✗	<b>STOT - Single Exposure</b>	✗
<b>Respiratory or Skin sensitisation</b>	✗	<b>STOT - Repeated Exposure</b>	✗
<b>Mutagenicity</b>	✗	<b>Aspiration Hazard</b>	✗

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
 ✓ – Data available to make classification

## SECTION 12 Ecological information

### Toxicity

<b>DD2000</b>	<b>Endpoint</b>	<b>Test Duration (hr)</b>	<b>Species</b>	<b>Value</b>	<b>Source</b>
		Not Available	Not Available	Not Available	Not Available
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

**DO NOT** discharge into sewer or waterways.

### Persistence and degradability

<b>Ingredient</b>	<b>Persistence: Water/Soil</b>	<b>Persistence: Air</b>
	No Data available for all ingredients	No Data available for all ingredients

### Bioaccumulative potential

<b>Ingredient</b>	<b>Bioaccumulation</b>
	No Data available for all ingredients

### Mobility in soil

<b>Ingredient</b>	<b>Mobility</b>
	No Data available for all ingredients

## SECTION 13 Disposal considerations

### Waste treatment methods

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▶ <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▶ Consult State Land Waste Authority for disposal.</li> <li>▶ Bury or incinerate residue at an approved site.</li> <li>▶ Recycle containers if possible, or dispose of in an authorised landfill.</li> </ul>
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## SECTION 14 Transport information

### Labels Required

<b>Marine Pollutant</b>	NO
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Land transport (TDG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
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**Transport in bulk in accordance with the IGC Code**

Product name	Ship Type
--------------	-----------

## SECTION 15 Regulatory information

### Safety, health and environmental regulations / legislation specific for the substance or mixture

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

### National Inventory Status

National Inventory	Status
Australia - AIIIC / Australia Non-Industrial Use	Not Available
Canada - DSL	Not Available
Canada - NDSC	Not Available
China - IECSC	Not Available
Europe - EINEC / ELINCS / NLP	Not Available
Japan - ENCS	Not Available
Korea - KECI	Not Available
New Zealand - NZIoC	Not Available
Philippines - PICCS	Not Available
USA - TSCA	Not Available
Mexico - INSQ	Not Available
Vietnam - NCI	Not Available
Russia - FBEPH	Not Available
<b>Legend:</b>	Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

## SECTION 16 Other information

<b>Revision Date</b>	14/04/2022
<b>Initial Date</b>	02/12/2021

### SDS Version Summary

Version	Date of Update	Sections Updated
3.1	03/12/2021	Physical and chemical properties - Appearance
4.1	14/04/2022	Physical and chemical properties - Appearance

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

### Definitions and abbreviations

PC - TWA: Permissible Concentration-Time Weighted Average  
 PC - STEL: Permissible Concentration-Short Term Exposure Limit  
 IARC: International Agency for Research on Cancer  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 STEL: Short Term Exposure Limit  
 TEEL: Temporary Emergency Exposure Limit  
 IDLH: Immediately Dangerous to Life or Health Concentrations  
 ES: Exposure Standard  
 OSF: Odour Safety Factor  
 NOAEL :No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value  
 LOD: Limit Of Detection  
 OTV: Odour Threshold Value  
 BCF: BioConcentration Factors  
 BEI: Biological Exposure Index

AIIC: Australian Inventory of Industrial Chemicals  
DSL: Domestic Substances List  
NDSL: Non-Domestic Substances List  
IECSC: Inventory of Existing Chemical Substance in China  
EINECS: European Inventory of Existing Commercial chemical Substances  
ELINCS: European List of Notified Chemical Substances  
NLP: No-Longer Polymers  
ENCS: Existing and New Chemical Substances Inventory  
KECI: Korea Existing Chemicals Inventory  
NZIoC: New Zealand Inventory of Chemicals  
PICCS: Philippine Inventory of Chemicals and Chemical Substances  
TSCA: Toxic Substances Control Act  
TCSI: Taiwan Chemical Substance Inventory  
INSQ: Inventario Nacional de Sustancias Químicas  
NCI: National Chemical Inventory  
FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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TEL (+61 3) 9572 4700.

## “ENVIRO MELT “



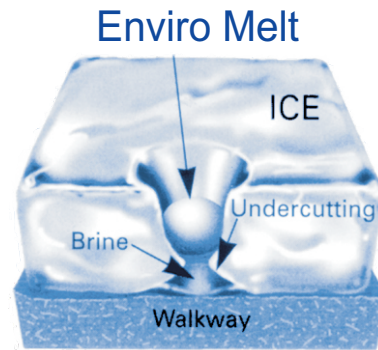
An extremely effective ice melter that eliminates ice in hazardous areas. 100% biodegradable and environmentally friendly Enviro Melt is designed to prevent damage to concrete in the freeze thaw cycles that occur with water in the pores of concrete. Formulated with ingredients that melt ice and snow at temperatures of below -36°C.

Applications: Sidewalks, steps, parking lots and anywhere ice and snow needs to be removed.

Directions / Dilutions: Use as is. Apply at the rate of 100 grams per metre on area to be de-iced. Spread by hand or fertilizer spreader on area to be de-iced.

### Laboratory Analysis:

Odour:	None
Appearance:	Green crystals
Flammability:	Non flammable
Solid Content:	100%
Solubility:	Excellent



Packaging: 20 Kg. pail

For further information consult the safety data sheet and label.

Visit us at our website [www.chemfax.com](http://www.chemfax.com)



# Safety Data Sheet

Section 1. Identification		
<b>Product Identifier</b>	<b>Liquid Fire</b>	<b>Version: 7</b> <b>Effective Date: 15 January 2021</b>
<b>Other Means Of Identification</b>	None	
<b>Initial Supplier Identifier</b>	Chemfax Products Ltd. 11444 – 42 Street SE Calgary, AB T2C 5C4 Tel: 403-287-2055	
<b>Recommended Use and Restrictions On Use</b>	Liquid Ice Melt. No restrictions.	
<b>Product Family</b>	Blend	
<b>Emergency Phone</b>	1-855-887-2055 Monday - Friday 8:00am - 4:30pm MST	

Section 2. Hazard Identification	
<b>Hazard Classification</b>	Not a regulated product
<b>Signal Word</b>	None
<b>Hazard Statement</b>	None
<b>Precautionary Prevention Statement</b>	Non Hazardous.
<b>Precautionary Response Statement</b>	Non Hazardous.
<b>Precautionary Storage Statement</b>	Non Hazardous.
<b>Precautionary Disposal Statement</b>	Non Hazardous.
<b>Other Hazards</b>	None

Section 3. Composition / Information on Ingredients			
Chemical Name	Common Name or Synonyms	CAS NO. and Other Unique Identifiers	% by weight
Ingredients are considered non-hazardous and constitute a proprietary blend			

# Safety Data Sheet

<b>Section 4. First-Aid Measures</b>	
<b>Eye Contact</b>	Flush eyes with water for 15 minutes. Seek medical attention.
<b>Skin Contact</b>	Flush area with water. If irritation persists seek medical attention. Launder clothing before reuse.
<b>Inhalation</b>	Remove victim to fresh air. If there is difficulty breathing, seek immediate medical attention.
<b>Ingestion</b>	Rinse mouth with water if conscious. Do not induce vomiting. Lay victim on left side to prevent aspiration of any vomit. Seek immediate medical attention.
<b>Most Important Symptoms and Effects Both Acute and Delayed</b>	Not hazardous
<b>Immediate Medical Attention and Special Treatment</b>	If in eyes rinse with plenty of water.

<b>Section 5. Fire-Fighting Measures</b>	
<b>Suitable and Unsuitable Extinguishing Media</b>	Use extinguishing media suitable for surrounding fire.
<b>Hazardous Combustion Products</b>	None known
<b>Specific Hazards Arising From the Product</b>	None known
<b>Special Protective Equipment and Precautions For Fire-Fighters</b>	Fire-fighters should wear self-contained breathing apparatus and full protective clothing.

<b>Section 6. Accidental Release Measures</b>	
<b>Personal Precautions, Protective Equipment and Emergency Procedures</b>	For clean-up, gloves and safety glasses should be worn.
<b>Environmental Precautions</b>	Do not allow large quantities of product to enter surface watercourse and sewer systems.
<b>Methods and Materials For Containment and Clean-Up</b>	Sweep up spilled material with care to avoid dust formation. Wash area with water to remove residues.

# Safety Data Sheet

Section 7. Handling and Storage	
<b>Precautions For Safe Handling</b>	Handle with care.
<b>Conditions For Safe Storage</b>	Store in a dry place. Keep containers closed when not in use.

Section 8. Exposure Controls / Personal Protection				
Control Parameters	TWA: 8 Hr	STEL: 15 min	Ceiling	IDLH *
All component ingredients of this product are considered non-hazardous and do not have exposure limits established.				
<b>Exposure Controls</b>	Local exhaust ventilation			
<b>Appropriate Engineering Controls</b>				
<b>Individual Protective Measures</b>	Not required under normal conditions of use.			
<b>Eye / Face Protection</b>	In case of spillage, wear safety glasses			
<b>Skin Protection</b>	In case of spillage, wear gloves			
<b>Respiratory Protection</b>	Not required			

Section 9. Physical and Chemical Properties	
<b>Appearance</b>	Slightly hazy and colourless.
<b>Odour</b>	Odourless
<b>Odour Threshold</b>	Not available.
<b>pH</b>	>7
<b>Flash Point</b>	> 93 °C
<b>Boiling Point and Boiling Range</b>	100 °C
<b>Melting Point and Freezing Point</b>	-51 °C
<b>Evaporation Rate</b>	Not determined
<b>Flammability (solid, gas)</b>	Not applicable
<b>Upper and Lower Flammability or Explosive Limits</b>	No data
<b>Vapour Pressure</b>	Not determined
<b>Vapour Density</b>	Not determined
<b>Relative Density</b>	1.329
<b>Solubility</b>	Completely soluble

## Safety Data Sheet

<b>Partition co-efficient, n-Octanol/Water</b>	No data
<b>Auto-ignition Temperature</b>	Not determined
<b>Decomposition Temperature</b>	No data
<b>Viscosity</b>	No data

Section 10. Stability and Reactivity	
<b>Reactivity</b>	The product is stable
<b>Chemical Stability</b>	The product is stable
<b>Possibility of Hazardous Reactions</b>	None
<b>Conditions to Avoid</b>	None
<b>Incompatible Materials</b>	Methyl vinyl ether and Furan-2-peroxy carboxylic acid
<b>Hazardous Decomposition Products</b>	Hydrogen and chlorine gases

Section 11. Toxicological Information			
Component Toxicity	LD50 Oral	LD50 Dermal	LC50 Inhalation
The ingredients are not hazardous.			
<b>Likely Routes of Exposure</b>			
<b>Skin:</b>	May cause stinging if in contact with open wounds.		
<b>Eyes:</b>	May cause stinging if in contact with eyes.		
<b>Inhalation:</b>	No hazard expected under normal conditions of use.		
<b>Ingestion:</b>	No hazard expected under normal conditions of use.		
<b>Acute Toxicity Estimates (ATE)</b>	Not hazardous		
<b>STOT (Specific Target Organ Toxicity) – Single Exposure</b>	Not hazardous		
<b>Aspiration Toxicity</b>	Not hazardous		
<b>STOT (Specific Target Organ Toxicity) – Repeated Exposure</b>	Not hazardous		
<b>Skin Corrosion / Irritation</b>	Not hazardous		
<b>Serious Eye Damage / Irritation</b>	Not hazardous		
<b>Respiratory or Skin Sensitization</b>	Not hazardous		
<b>Carcinogenicity</b>	Not listed.		



# Safety Data Sheet

<b>Reproductive Toxicity</b>	
- <b>Sexual Function and Fertility</b>	Not hazardous
- <b>Development of Offspring</b>	Not hazardous
- <b>Effects on or via Lactation</b>	Not hazardous
<b>Germ Cell Mutagenicity</b>	Not hazardous
<b>Interactive Effects</b>	Not hazardous
<b>Other Information</b>	Not applicable

<b>Section 12. Ecological Information</b>	
<b>Ecotoxicity</b>	LC50: 4600 mg/L ( <i>Oncorhynchus mykiss</i> ) LC50: 3500 mg/L ( <i>Daphnia Magna</i> )
<b>Persistence and Degradability</b>	Readily degradable
<b>Bioaccumulative Potential</b>	Not expected
<b>Biodegradability</b>	Expected to be completely biodegradable
<b>Mobility in Soil</b>	No data
<b>Special Remarks</b>	B.O.D. <1.0 mg/L C.O.D 264 mg/L
<b>Other Adverse Effects</b>	Not applicable

<b>Section 13. Disposal Considerations</b>	
<b>Disposal Considerations</b>	Dispose of contents/container in accordance with local regulations.

<b>Section 14. Transport Information</b>	
<b>UN Number</b>	None
<b>UN Proper Shipping Name</b>	None
<b>Transport Hazard Class(es)</b>	None
<b>Packaging Group</b>	None
<b>Environmental Hazards</b>	Not applicable
<b>Bulk Transport</b>	Not applicable
<b>Special Precaution</b>	Not applicable
<b>DOT Erg#</b>	Not applicable

# Safety Data Sheet

<b>Section 15. Regulatory Information</b>	
<b>Canada – DSL Inventory</b>	All components of this product are either on the Domestic Substances List (DSL), Non-Domestic Substances List (NDSL), or exempt
<b>TSCA</b>	All components of this product are either on the Toxic Substances Control Act (TSCA) Inventory List or exempt
<b>Additional Information</b>	None

<b>Section 16. Other Information</b>	
<b>NFPA Rating</b>	Health-0/ Flammability-0/Reactivity-0/Special Hazard-Not applicable
<b>HMIS Rating</b>	Health-0/Flammability-0/Reactivity-0/Personal Protection-See Section 8.
<b>Prepared by:</b>	Chemfax Products Ltd., Technical Department
<b>Date Prepared:</b>	15 January, 2013
<b>Date of Latest Revision:</b>	15 January 2021
<p><b>Disclaimer</b>            Notice to reader</p> <p>To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.</p> <p>Chemfax Products Ltd. expressly disclaims all expressed or implied warranties of merchantability and fitness for a particular purpose with respect to the product provided.</p>	



## Epiroc Sand Drill

### Fordia

Chemwatch: 5481-16

Version No: 3.1

Safety Data Sheet according to WHMIS 2015 requirements

Issue Date: 07/12/2021

Print Date: 16/06/2023

S.GHS.CAN.EN.E

#### SECTION 1 Identification

##### Product Identifier

Product name	Epiroc Sand Drill
Chemical Name	Not Applicable
Synonyms	Not Available
Chemical formula	Not Applicable
Other means of identification	9469709635

##### Recommended use of the chemical and restrictions on use

Relevant identified uses	Drilling fluid additive.
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##### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	Fordia	Control Chemical (1989)
Address	3, Hôtel-de-Ville, Dollard-des-Ormeaux QC H9B 3G4 Canada	7016 - 30 Street SE, Calgary AB T2C 1N9 Canada
Telephone	+1 514 336 9211 +1 800 768 7274	+1 403 720 7044 +1 800 267 6840
Fax	Not Available	+1 403 720 4951
Website	<a href="http://www.fordia.com">www.fordia.com</a>	<a href="http://www.matexdrillingfluids.ca/">http://www.matexdrillingfluids.ca/</a>
Email	info@fordia.com	orders@matexdrillingfluids.ca

##### Emergency phone number

Association / Organisation	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	+1 867 670 2867
Other emergency telephone numbers	+61 3 9573 3188

Once connected and if the message is not in your preferred language then please dial 01

Une fois connecté et si le message n'est pas dans votre langue préférée alors s'il vous plaît cadran 07

#### SECTION 2 Hazard(s) identification

##### Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

##### Canadian WHMIS Symbols

Classification	Not Applicable
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##### Label elements

Hazard pictogram(s)	Not Applicable
Signal word	Not Applicable

**Hazard statement(s)**

Not Applicable

**Physical and Health hazard(s) not otherwise classified**

Not Applicable

**Precautionary statement(s) Prevention**

Not Applicable

**Precautionary statement(s) Response**

Not Applicable

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

**SECTION 3 Composition / information on ingredients****Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
Not Available	100	Ingredients determined not to be hazardous

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

**SECTION 4 First-aid measures****Description of first aid measures**

<b>Eye Contact</b>	If this product comes in contact with eyes: <ul style="list-style-type: none"> <li>▶ Wash out immediately with water.</li> <li>▶ If irritation continues, seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	If skin or hair contact occurs: <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5 Fire-fighting measures****Extinguishing media**

- ▶ There is no restriction on the type of extinguisher which may be used.
- ▶ Use extinguishing media suitable for surrounding area.

**Do not** use water jets.**Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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**Special protective equipment and precautions for fire-fighters**

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves in the event of a fire.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water courses.</li> <li>▶ Use fire fighting procedures suitable for surrounding area.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> <li>▶ Equipment should be thoroughly decontaminated after use.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Solid which exhibits difficult combustion or is difficult to ignite.</li> <li>▶ Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion.</li> <li>▶ Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited; once initiated larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.</li> <li>▶ A dust explosion may release large quantities of gaseous products; this in turn creates a subsequent pressure rise of explosive force capable of damaging plant and buildings and injuring people.</li> <li>▶ Usually the initial or primary explosion takes place in a confined space such as plant or machinery, and can be of sufficient force to damage or rupture the plant. If the shock wave from the primary explosion enters the surrounding area, it will disturb any settled dust layers, forming a second dust cloud, and often initiate a much larger secondary explosion. All large scale explosions have resulted from chain reactions of this</li> </ul>

	<p>type.</p> <ul style="list-style-type: none"> <li>▶ Dry dust can also be charged electrostatically by turbulence, pneumatic transport, pouring, in exhaust ducts and during transport.</li> <li>▶ Build-up of electrostatic charge may be prevented by bonding and grounding.</li> <li>▶ Powder handling equipment such as dust collectors, dryers and mills may require additional protection measures such as explosion venting.</li> <li>▶ All movable parts coming in contact with this material should have a speed of less than 1-metre/sec.</li> </ul> <p>Combustion products include: carbon monoxide (CO) carbon dioxide (CO<sub>2</sub>) other pyrolysis products typical of burning organic material.</p>
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## SECTION 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid contact with skin and eyes.</li> <li>▶ Wear impervious gloves and safety glasses.</li> <li>▶ Use dry clean up procedures and avoid generating dust.</li> <li>▶ Vacuum up (consider explosion-proof machines designed to be grounded during storage and use).</li> <li>▶ Do NOT use air hoses for cleaning</li> <li>▶ Place spilled material in clean, dry, sealable, labelled container.</li> </ul> <p>Slippery when spilt.</p>
<b>Major Spills</b>	<ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Control personal contact with the substance, by using protective equipment and dust respirator.</li> <li>▶ Prevent spillage from entering drains, sewers or water courses.</li> <li>▶ Avoid generating dust.</li> <li>▶ Sweep, shovel up. Recover product wherever possible.</li> <li>▶ Put residues in labelled plastic bags or other containers for disposal.</li> <li>▶ If contamination of drains or waterways occurs, advise emergency services.</li> </ul> <p>Slippery when spilt.</p>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 Handling and storage

### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Limit all unnecessary personal contact.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ When handling, <b>DO NOT eat, drink or smoke.</b></li> <li>▶ Keep containers securely sealed when not in use.</li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions are maintained.</li> <li>▶ Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions)</li> <li>▶ Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame.</li> <li>▶ Establish good housekeeping practices.</li> <li>▶ Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.</li> <li>▶ Use continuous suction at points of dust generation to capture and minimise the accumulation of dusts. Particular attention should be given to overhead and hidden horizontal surfaces to minimise the probability of a "secondary" explosion. According to NFPA Standard 654, dust layers 1/32 in.(0.8 mm) thick can be sufficient to warrant immediate cleaning of the area.</li> <li>▶ Do not use air hoses for cleaning.</li> <li>▶ Minimise dry sweeping to avoid generation of dust clouds. Vacuum dust-accumulating surfaces and remove to a chemical disposal area. Vacuums with explosion-proof motors should be used.</li> <li>▶ Control sources of static electricity. Dusts or their packages may accumulate static charges, and static discharge can be a source of ignition.</li> <li>▶ Solids handling systems must be designed in accordance with applicable standards (e.g. NFPA including 654 and 77) and other national guidance.</li> <li>▶ Do not empty directly into flammable solvents or in the presence of flammable vapors.</li> <li>▶ The operator, the packaging container and all equipment must be grounded with electrical bonding and grounding systems. Plastic bags and plastics cannot be grounded, and antistatic bags do not completely protect against development of static charges.</li> </ul> <p>Empty containers may contain residual dust which has the potential to accumulate following settling. Such dusts may explode in the presence of an appropriate ignition source.</p> <ul style="list-style-type: none"> <li>▶ <b>Do NOT cut, drill, grind or weld such containers.</b></li> <li>▶ In addition ensure such activity is not performed near full, partially empty or empty containers without appropriate workplace safety authorisation or permit.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ Store in a cool, dry area protected from environmental extremes.</li> </ul>

## Epiroc Sand Drill

- ▶ Store away from incompatible materials and foodstuff containers.
- ▶ Protect containers against physical damage and check regularly for leaks.
- ▶ Observe manufacturer's storage and handling recommendations contained within this SDS.

For major quantities:

- ▶ Consider storage in banded areas - ensure storage areas are isolated from sources of community water (including stormwater, ground water, lakes and streams).
- ▶ Ensure that accidental discharge to air or water is the subject of a contingency disaster management plan; this may require consultation with local authorities.

## Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Lined metal can, lined metal pail/ can.</li> <li>▶ Plastic pail.</li> <li>▶ Polyliner drum.</li> <li>▶ Packing as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Avoid storage with reducing agents.</li> <li>▶ Avoid reaction with oxidising agents</li> </ul>

## SECTION 8 Exposure controls / personal protection

## Control parameters

## Occupational Exposure Limits (OEL)

## INGREDIENT DATA


Not Available

## Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
Epiroc Sand Drill	Not Available	Not Available	Not Available

Ingredient	Original IDLH	Revised IDLH
Epiroc Sand Drill	Not Available	Not Available

## Exposure controls

<b>Appropriate engineering controls</b>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection.</p> <p>The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use.</p> <p>Employers may need to use multiple types of controls to prevent employee overexposure.</p> <ul style="list-style-type: none"> <li>▶ Local exhaust ventilation is required where solids are handled as powders or crystals; even when particulates are relatively large, a certain proportion will be powdered by mutual friction.</li> <li>▶ If in spite of local exhaust an adverse concentration of the substance in air could occur, respiratory protection should be considered.</li> </ul> <p>Such protection might consist of:</p> <p>(a): particle dust respirators, if necessary, combined with an absorption cartridge;</p> <p>(b): filter respirators with absorption cartridge or canister of the right type;</p> <p>(c): fresh-air hoods or masks.</p> <p>Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p> <table border="1" style="width: 100%;"> <thead> <tr> <th>Type of Contaminant:</th> <th>Air Speed:</th> </tr> </thead> <tbody> <tr> <td>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td> <td>1-2.5 m/s (200-500 f/min.)</td> </tr> <tr> <td>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</td> <td>2.5-10 m/s (500-2000 f/min.)</td> </tr> </tbody> </table> <p>Within each range the appropriate value depends on:</p> <table border="1" style="width: 100%;"> <thead> <tr> <th>Lower end of the range</th> <th>Upper end of the range</th> </tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only.</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> <tr> <td>4: Large hood or large air mass in motion</td> <td>4: Small hood-local control only</td> </tr> </tbody> </table> <p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 4-10 m/s (800-2000 f/min) for extraction of crusher dusts generated 2 metres distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p>	Type of Contaminant:	Air Speed:	direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min.)	grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)	Lower end of the range	Upper end of the range	1: Room air currents minimal or favourable to capture	1: Disturbing room air currents	2: Contaminants of low toxicity or of nuisance value only.	2: Contaminants of high toxicity	3: Intermittent, low production.	3: High production, heavy use	4: Large hood or large air mass in motion	4: Small hood-local control only
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<b>Individual protection measures, such as personal protective equipment</b>																	

<b>Eye and face protection</b>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields</li> <li>▶ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].</li> </ul>
<b>Skin protection</b>	See Hand protection below
<b>Hands/feet protection</b>	<p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> <li>· frequency and duration of contact,</li> <li>· chemical resistance of glove material,</li> <li>· glove thickness and</li> <li>· dexterity</li> </ul> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> <li>· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>· Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.</li> <li>· Contaminated gloves should be replaced.</li> </ul> <p>As defined in ASTM F-739-96 in any application, gloves are rated as:</p> <ul style="list-style-type: none"> <li>· Excellent when breakthrough time &gt; 480 min</li> <li>· Good when breakthrough time &gt; 20 min</li> <li>· Fair when breakthrough time &lt; 20 min</li> <li>· Poor when glove material degrades</li> </ul> <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended.</p> <p>It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.</p> <p>Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> <li>· Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.</li> <li>· Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential</li> </ul> <p>Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Experience indicates that the following polymers are suitable as glove materials for protection against undissolved, dry solids, where abrasive particles are not present.</p> <ul style="list-style-type: none"> <li>▶ polychloroprene.</li> <li>▶ nitrile rubber.</li> <li>▶ butyl rubber.</li> <li>▶ fluoroacoutchouc.</li> <li>▶ polyvinyl chloride.</li> </ul> <p>Gloves should be examined for wear and/ or degradation constantly.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	<p>No special equipment needed when handling small quantities.</p> <p><b>OTHERWISE:</b></p> <ul style="list-style-type: none"> <li>▶ Overalls.</li> <li>▶ Barrier cream.</li> <li>▶ Eyewash unit.</li> </ul>

### Respiratory protection

Type -P Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

- Respirators may be necessary when engineering and administrative controls do not adequately prevent exposures.
- The decision to use respiratory protection should be based on professional judgment that takes into account toxicity information, exposure measurement data, and frequency and likelihood of the worker's exposure - ensure users are not subject to high thermal loads which may result in heat stress or distress due to personal protective equipment (powered, positive flow, full face apparatus may be an option).
- Published occupational exposure limits, where they exist, will assist in determining the adequacy of the selected respiratory protection. These may be government mandated or vendor recommended.
- Certified respirators will be useful for protecting workers from inhalation of particulates when properly selected and fit tested as part of a complete respiratory protection program.
- Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU)
- Use approved positive flow mask if significant quantities of dust becomes airborne.
- Try to avoid creating dust conditions.

## SECTION 9 Physical and chemical properties

### Information on basic physical and chemical properties

<b>Appearance</b>	Solid		
<b>Physical state</b>	Solid	<b>Relative density (Water = 1)</b>	Not Available

Epiroc Sand Drill

Odour	No Odour	Partition coefficient n-octanol / water	Not Available
Odour threshold	Not Available	Auto-ignition temperature (°C)	Not Applicable
pH (as supplied)	Not Applicable	Decomposition temperature (°C)	Not Available
Melting point / freezing point (°C)	Not Available	Viscosity (cSt)	Not Applicable
Initial boiling point and boiling range (°C)	Not Available	Molecular weight (g/mol)	Not Applicable
Flash point (°C)	Not Applicable	Taste	Not Available
Evaporation rate	Not Applicable	Explosive properties	Not Available
Flammability	Not Applicable	Oxidising properties	Not Available
Upper Explosive Limit (%)	Not Applicable	Surface Tension (dyn/cm or mN/m)	Not Applicable
Lower Explosive Limit (%)	Not Applicable	Volatile Component (%vol)	Not Available
Vapour pressure (kPa)	Not Applicable	Gas group	Not Available
Solubility in water	Not Available	pH as a solution (1%)	Not Applicable
Vapour density (Air = 1)	Not Applicable	VOC g/L	Not Available

SECTION 10 Stability and reactivity

Reactivity	See section 7
Chemical stability	<ul style="list-style-type: none"> <li>▶ Unstable in the presence of incompatible materials.</li> <li>▶ Product is considered stable.</li> <li>▶ Hazardous polymerisation will not occur.</li> </ul>
Possibility of hazardous reactions	See section 7
Conditions to avoid	See section 7
Incompatible materials	See section 7
Hazardous decomposition products	See section 5

SECTION 11 Toxicological information

Information on toxicological effects

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion	The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Epiroc Sand Drill	TOXICITY	IRRITATION
	Not Available	Not Available
Legend:	1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances	

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

Legend: ✗ – Data either not available or does not fill the criteria for classification  
✓ – Data available to make classification

SECTION 12 Ecological information

Toxicity

Epiroc Sand Drill	Endpoint	Test Duration (hr)	Species	Value	Source
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Continued...

	Not Available	Not Available	Not Available	Not Available	Not Available
<b>Legend:</b>	Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data				

**DO NOT** discharge into sewer or waterways.

#### Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

#### Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

#### Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

### SECTION 13 Disposal considerations

#### Waste treatment methods

<b>Product / Packaging disposal</b>	<ul style="list-style-type: none"> <li>▶ Recycle wherever possible.</li> <li>▶ Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.</li> <li>▶ Dispose of by: burial in a land-fill specifically licensed to accept chemical and / or pharmaceutical wastes or Incineration in a licensed apparatus (after admixture with suitable combustible material)</li> <li>▶ Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.</li> </ul>
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### SECTION 14 Transport information

#### Labels Required

<b>Marine Pollutant</b>	NO
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**Land transport (TDG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group

**Transport in bulk in accordance with the IGC Code**

Product name	Ship Type

### SECTION 15 Regulatory information

#### Safety, health and environmental regulations / legislation specific for the substance or mixture

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

#### National Inventory Status

National Inventory	Status
Australia - AIIIC / Australia Non-Industrial Use	Not Available
Canada - DSL	Not Available
Canada - NDSL	Not Available
China - IECSC	Not Available
Europe - EINEC / ELINCS / NLP	Not Available
Japan - ENCS	Not Available
Korea - KECI	Not Available
New Zealand - NZIoC	Not Available
Philippines - PICCS	Not Available

National Inventory	Status
USA - TSCA	Not Available
Mexico - INSQ	Not Available
Vietnam - NCI	Not Available
Russia - FBEPH	Not Available

**Legend:** Yes = All CAS declared ingredients are on the inventory  
No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.

## SECTION 16 Other information

Revision Date	07/12/2021
Initial Date	06/12/2021

### SDS Version Summary

Version	Date of Update	Sections Updated
3.1	07/12/2021	Physical and chemical properties - Appearance, Firefighting measures - Fire Fighter (extinguishing media), Accidental release measures - Spills (major), Accidental release measures - Spills (minor), Handling and storage - Storage (storage incompatibility)

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

### Definitions and abbreviations

PC - TWA: Permissible Concentration-Time Weighted Average  
 PC - STEL: Permissible Concentration-Short Term Exposure Limit  
 IARC: International Agency for Research on Cancer  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 STEL: Short Term Exposure Limit  
 TEEL: Temporary Emergency Exposure Limit  
 IDLH: Immediately Dangerous to Life or Health Concentrations  
 ES: Exposure Standard  
 OSF: Odour Safety Factor  
 NOAEL :No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value  
 LOD: Limit Of Detection  
 OTV: Odour Threshold Value  
 BCF: BioConcentration Factors  
 BEI: Biological Exposure Index  
 AIIIC: Australian Inventory of Industrial Chemicals  
 DSL: Domestic Substances List  
 NDSL: Non-Domestic Substances List  
 IECSC: Inventory of Existing Chemical Substance in China  
 EINECS: European INventory of Existing Commercial chemical Substances  
 ELINCS: European List of Notified Chemical Substances  
 NLP: No-Longer Polymers  
 ENCS: Existing and New Chemical Substances Inventory  
 KECI: Korea Existing Chemicals Inventory  
 NZIoC: New Zealand Inventory of Chemicals  
 PICCS: Philippine Inventory of Chemicals and Chemical Substances  
 TSCA: Toxic Substances Control Act  
 TCSI: Taiwan Chemical Substance Inventory  
 INSQ: Inventario Nacional de Sustancias Químicas  
 NCI: National Chemical Inventory  
 FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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TEL (+61 3) 9572 4700.



## Epiroc Torqueless

### Fordia

Chemwatch: 5481-18

Version No: 2.1

Safety Data Sheet according to WHMIS 2015 requirements

Issue Date: 06/12/2021

Print Date: 16/06/2023

S.GHS.CAN.EN.E

#### SECTION 1 Identification

##### Product Identifier

Product name	Epiroc Torqueless
Chemical Name	Not Applicable
Synonyms	Not Available
Chemical formula	Not Applicable
Other means of identification	9469709669

##### Recommended use of the chemical and restrictions on use

Relevant identified uses	Drilling lubricant.
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##### Name, address, and telephone number of the chemical manufacturer, importer, or other responsible party

Registered company name	Fordia	Control Chemical (1989)
Address	3, Hôtel-de-Ville, Dollard-des-Ormeaux QC H9B 3G4 Canada	7016 - 30 Street SE, Calgary AB T2C 1N9 Canada
Telephone	+1 514 336 9211 +1 800 768 7274	+1 403 720 7044 +1 800 267 6840
Fax	Not Available	+1 403 720 4951
Website	<a href="http://www.fordia.com">www.fordia.com</a>	<a href="http://www.matexdrillingfluids.ca/">http://www.matexdrillingfluids.ca/</a>
Email	info@fordia.com	orders@matexdrillingfluids.ca

##### Emergency phone number

Association / Organisation	CHEMWATCH EMERGENCY RESPONSE (24/7)
Emergency telephone numbers	+1 867 670 2867
Other emergency telephone numbers	+61 3 9573 3188

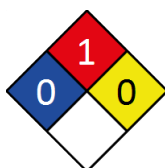
Once connected and if the message is not in your preferred language then please dial 01

Une fois connecté et si le message n'est pas dans votre langue préférée alors s'il vous plaît cadran 07

#### SECTION 2 Hazard(s) identification

##### Classification of the substance or mixture

NFPA 704 diamond



Note: The hazard category numbers found in GHS classification in section 2 of this SDSs are NOT to be used to fill in the NFPA 704 diamond. Blue = Health Red = Fire Yellow = Reactivity White = Special (Oxidizer or water reactive substances)

##### Canadian WHMIS Symbols

Classification	Not Applicable
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##### Label elements

Hazard pictogram(s)	Not Applicable
Signal word	<b>Not Applicable</b>

**Hazard statement(s)**

Not Applicable

**Physical and Health hazard(s) not otherwise classified**

Not Applicable

**Precautionary statement(s) Prevention**

Not Applicable

**Precautionary statement(s) Response**

Not Applicable

**Precautionary statement(s) Storage**

Not Applicable

**Precautionary statement(s) Disposal**

Not Applicable

**SECTION 3 Composition / information on ingredients****Substances**

See section below for composition of Mixtures

**Mixtures**

CAS No	%[weight]	Name
Not Available	100	Ingredients determined not to be hazardous

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

**SECTION 4 First-aid measures****Description of first aid measures**

<b>Eye Contact</b>	If this product comes in contact with eyes: <ul style="list-style-type: none"> <li>▶ Wash out immediately with water.</li> <li>▶ If irritation continues, seek medical attention.</li> <li>▶ Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.</li> </ul>
<b>Skin Contact</b>	If skin or hair contact occurs: <ul style="list-style-type: none"> <li>▶ Flush skin and hair with running water (and soap if available).</li> <li>▶ Seek medical attention in event of irritation.</li> </ul>
<b>Inhalation</b>	<ul style="list-style-type: none"> <li>▶ If fumes, aerosols or combustion products are inhaled remove from contaminated area.</li> <li>▶ Other measures are usually unnecessary.</li> </ul>
<b>Ingestion</b>	<ul style="list-style-type: none"> <li>▶ Immediately give a glass of water.</li> <li>▶ First aid is not generally required. If in doubt, contact a Poisons Information Centre or a doctor.</li> </ul>

**Indication of any immediate medical attention and special treatment needed**

Treat symptomatically.

**SECTION 5 Fire-fighting measures****Extinguishing media**

- ▶ Foam.
- ▶ Dry chemical powder.
- ▶ Carbon dioxide.
- ▶ Water spray or fog - Large fires only.

**Special hazards arising from the substrate or mixture**

<b>Fire Incompatibility</b>	▶ Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result
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**Special protective equipment and precautions for fire-fighters**

<b>Fire Fighting</b>	<ul style="list-style-type: none"> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear full body protective clothing with breathing apparatus.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ Use water delivered as a fine spray to control fire and cool adjacent area.</li> <li>▶ Avoid spraying water onto liquid pools.</li> <li>▶ <b>DO NOT</b> approach containers suspected to be hot.</li> <li>▶ Cool fire exposed containers with water spray from a protected location.</li> <li>▶ If safe to do so, remove containers from path of fire.</li> </ul>
<b>Fire/Explosion Hazard</b>	<ul style="list-style-type: none"> <li>▶ Combustible.</li> <li>▶ Slight fire hazard when exposed to heat or flame.</li> <li>▶ Heating may cause expansion or decomposition leading to violent rupture of containers.</li> <li>▶ On combustion, may emit toxic fumes of carbon monoxide (CO).</li> <li>▶ May emit acrid smoke.</li> <li>▶ Mists containing combustible materials may be explosive.</li> </ul> Combustion products include: carbon dioxide (CO <sub>2</sub> ) sulfur oxides (SO <sub>x</sub> )

other pyrolysis products typical of burning organic material.

## SECTION 6 Accidental release measures

### Personal precautions, protective equipment and emergency procedures

See section 8

### Environmental precautions

See section 12

### Methods and material for containment and cleaning up

<b>Minor Spills</b>	<ul style="list-style-type: none"> <li>▶ Remove all ignition sources.</li> <li>▶ Clean up all spills immediately.</li> <li>▶ Avoid breathing vapours and contact with skin and eyes.</li> <li>▶ Control personal contact with the substance, by using protective equipment.</li> <li>▶ Contain and absorb spill with sand, earth, inert material or vermiculite.</li> <li>▶ Wipe up.</li> <li>▶ Place in a suitable, labelled container for waste disposal.</li> </ul>
<b>Major Spills</b>	<p>Moderate hazard.</p> <ul style="list-style-type: none"> <li>▶ Clear area of personnel and move upwind.</li> <li>▶ Alert Fire Brigade and tell them location and nature of hazard.</li> <li>▶ Wear breathing apparatus plus protective gloves.</li> <li>▶ Prevent, by any means available, spillage from entering drains or water course.</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Increase ventilation.</li> <li>▶ Stop leak if safe to do so.</li> <li>▶ Contain spill with sand, earth or vermiculite.</li> <li>▶ Collect recoverable product into labelled containers for recycling.</li> <li>▶ Absorb remaining product with sand, earth or vermiculite.</li> <li>▶ Collect solid residues and seal in labelled drums for disposal.</li> <li>▶ Wash area and prevent runoff into drains.</li> <li>▶ If contamination of drains or waterways occurs, advise emergency services.</li> </ul>

Personal Protective Equipment advice is contained in Section 8 of the SDS.

## SECTION 7 Handling and storage

### Precautions for safe handling

<b>Safe handling</b>	<ul style="list-style-type: none"> <li>▶ Avoid all personal contact, including inhalation.</li> <li>▶ Wear protective clothing when risk of exposure occurs.</li> <li>▶ Use in a well-ventilated area.</li> <li>▶ Prevent concentration in hollows and sumps.</li> <li>▶ <b>DO NOT enter confined spaces until atmosphere has been checked.</b></li> <li>▶ Avoid smoking, naked lights or ignition sources.</li> <li>▶ Avoid contact with incompatible materials.</li> <li>▶ When handling, <b>DO NOT eat, drink or smoke.</b></li> <li>▶ Keep containers securely sealed when not in use.</li> <li>▶ Avoid physical damage to containers.</li> <li>▶ Always wash hands with soap and water after handling.</li> <li>▶ Work clothes should be laundered separately.</li> <li>▶ Use good occupational work practice.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> <li>▶ Atmosphere should be regularly checked against established exposure standards to ensure safe working conditions.</li> </ul>
<b>Other information</b>	<ul style="list-style-type: none"> <li>▶ Store in original containers.</li> <li>▶ Keep containers securely sealed.</li> <li>▶ No smoking, naked lights or ignition sources.</li> <li>▶ Store in a cool, dry, well-ventilated area.</li> <li>▶ Store away from incompatible materials and foodstuff containers.</li> <li>▶ Protect containers against physical damage and check regularly for leaks.</li> <li>▶ Observe manufacturer's storage and handling recommendations contained within this SDS.</li> </ul>

### Conditions for safe storage, including any incompatibilities

<b>Suitable container</b>	<ul style="list-style-type: none"> <li>▶ Metal can or drum</li> <li>▶ Packaging as recommended by manufacturer.</li> <li>▶ Check all containers are clearly labelled and free from leaks.</li> </ul>
<b>Storage incompatibility</b>	<ul style="list-style-type: none"> <li>▶ Avoid reaction with oxidising agents</li> </ul>

## SECTION 8 Exposure controls / personal protection

### Control parameters

#### Occupational Exposure Limits (OEL)

#### INGREDIENT DATA

Not Available


#### Emergency Limits

Ingredient	TEEL-1	TEEL-2	TEEL-3
Epiroc Torqueless	Not Available	Not Available	Not Available

Continued...

Ingredient	Original IDLH	Revised IDLH
Epiroc Torqueless	Not Available	Not Available

### Exposure controls

<p><b>Appropriate engineering controls</b></p>	<p>Engineering controls are used to remove a hazard or place a barrier between the worker and the hazard. Well-designed engineering controls can be highly effective in protecting workers and will typically be independent of worker interactions to provide this high level of protection. The basic types of engineering controls are:</p> <p>Process controls which involve changing the way a job activity or process is done to reduce the risk.</p> <p>Enclosure and/or isolation of emission source which keeps a selected hazard "physically" away from the worker and ventilation that strategically "adds" and "removes" air in the work environment. Ventilation can remove or dilute an air contaminant if designed properly. The design of a ventilation system must match the particular process and chemical or contaminant in use. Employers may need to use multiple types of controls to prevent employee overexposure.</p> <p>General exhaust is adequate under normal operating conditions. If risk of overexposure exists, wear SAA approved respirator. Correct fit is essential to obtain adequate protection. Provide adequate ventilation in warehouse or closed storage areas. Air contaminants generated in the workplace possess varying "escape" velocities which, in turn, determine the "capture velocities" of fresh circulating air required to effectively remove the contaminant.</p> <table border="1"> <thead> <tr> <th>Type of Contaminant:</th> <th>Air Speed:</th> </tr> </thead> <tbody> <tr> <td>solvent, vapours, degreasing etc., evaporating from tank (in still air)</td> <td>0.25-0.5 m/s (50-100 f/min)</td> </tr> <tr> <td>aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)</td> <td>0.5-1 m/s (100-200 f/min.)</td> </tr> <tr> <td>direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)</td> <td>1-2.5 m/s (200-500 f/min)</td> </tr> <tr> <td>grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).</td> <td>2.5-10 m/s (500-2000 f/min.)</td> </tr> </tbody> </table> <p>Within each range the appropriate value depends on:</p> <table border="1"> <thead> <tr> <th>Lower end of the range</th> <th>Upper end of the range</th> </tr> </thead> <tbody> <tr> <td>1: Room air currents minimal or favourable to capture</td> <td>1: Disturbing room air currents</td> </tr> <tr> <td>2: Contaminants of low toxicity or of nuisance value only</td> <td>2: Contaminants of high toxicity</td> </tr> <tr> <td>3: Intermittent, low production.</td> <td>3: High production, heavy use</td> </tr> <tr> <td>4: Large hood or large air mass in motion</td> <td>4: Small hood - local control only</td> </tr> </tbody> </table> <p>Simple theory shows that air velocity falls rapidly with distance away from the opening of a simple extraction pipe. Velocity generally decreases with the square of distance from the extraction point (in simple cases). Therefore the air speed at the extraction point should be adjusted, accordingly, after reference to distance from the contaminating source. The air velocity at the extraction fan, for example, should be a minimum of 1-2 m/s (200-400 f/min.) for extraction of solvents generated in a tank 2 meters distant from the extraction point. Other mechanical considerations, producing performance deficits within the extraction apparatus, make it essential that theoretical air velocities are multiplied by factors of 10 or more when extraction systems are installed or used.</p>	Type of Contaminant:	Air Speed:	solvent, vapours, degreasing etc., evaporating from tank (in still air)	0.25-0.5 m/s (50-100 f/min)	aerosols, fumes from pouring operations, intermittent container filling, low speed conveyer transfers, welding, spray drift, plating acid fumes, pickling (released at low velocity into zone of active generation)	0.5-1 m/s (100-200 f/min.)	direct spray, spray painting in shallow booths, drum filling, conveyer loading, crusher dusts, gas discharge (active generation into zone of rapid air motion)	1-2.5 m/s (200-500 f/min)	grinding, abrasive blasting, tumbling, high speed wheel generated dusts (released at high initial velocity into zone of very high rapid air motion).	2.5-10 m/s (500-2000 f/min.)	Lower end of the range	Upper end of the range	1: Room air currents minimal or favourable to capture	1: Disturbing room air currents	2: Contaminants of low toxicity or of nuisance value only	2: Contaminants of high toxicity	3: Intermittent, low production.	3: High production, heavy use	4: Large hood or large air mass in motion	4: Small hood - local control only
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<p><b>Individual protection measures, such as personal protective equipment</b></p>																					
<p><b>Eye and face protection</b></p>	<ul style="list-style-type: none"> <li>▶ Safety glasses with side shields</li> <li>▶ Chemical goggles. [AS/NZS 1337.1, EN166 or national equivalent]</li> <li>▶ Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lens should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59].</li> </ul>																				
<p><b>Skin protection</b></p>	<p>See Hand protection below</p>																				
<p><b>Hands/feet protection</b></p>	<p>Wear general protective gloves, eg. light weight rubber gloves.</p> <p>The selection of suitable gloves does not only depend on the material, but also on further marks of quality which vary from manufacturer to manufacturer. Where the chemical is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.</p> <p>The exact break through time for substances has to be obtained from the manufacturer of the protective gloves and has to be observed when making a final choice.</p> <p>Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p> <p>Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:</p> <ul style="list-style-type: none"> <li>· frequency and duration of contact,</li> <li>· chemical resistance of glove material,</li> <li>· glove thickness and</li> <li>· dexterity</li> </ul> <p>Select gloves tested to a relevant standard (e.g. Europe EN 374, US F739, AS/NZS 2161.1 or national equivalent).</p> <ul style="list-style-type: none"> <li>· When prolonged or frequently repeated contact may occur, a glove with a protection class of 5 or higher (breakthrough time greater than 240 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>· When only brief contact is expected, a glove with a protection class of 3 or higher (breakthrough time greater than 60 minutes according to EN 374, AS/NZS 2161.10.1 or national equivalent) is recommended.</li> <li>· Some glove polymer types are less affected by movement and this should be taken into account when considering gloves for long-term use.</li> <li>· Contaminated gloves should be replaced.</li> </ul> <p>As defined in ASTM F-739-96 in any application, gloves are rated as:</p> <ul style="list-style-type: none"> <li>· Excellent when breakthrough time &gt; 480 min</li> <li>· Good when breakthrough time &gt; 20 min</li> <li>· Fair when breakthrough time &lt; 20 min</li> </ul>																				

	<ul style="list-style-type: none"> <li>· Poor when glove material degrades</li> </ul> <p>For general applications, gloves with a thickness typically greater than 0.35 mm, are recommended. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material. Therefore, glove selection should also be based on consideration of the task requirements and knowledge of breakthrough times.</p> <p>Glove thickness may also vary depending on the glove manufacturer, the glove type and the glove model. Therefore, the manufacturers technical data should always be taken into account to ensure selection of the most appropriate glove for the task.</p> <p>Note: Depending on the activity being conducted, gloves of varying thickness may be required for specific tasks. For example:</p> <ul style="list-style-type: none"> <li>· Thinner gloves (down to 0.1 mm or less) may be required where a high degree of manual dexterity is needed. However, these gloves are only likely to give short duration protection and would normally be just for single use applications, then disposed of.</li> <li>· Thicker gloves (up to 3 mm or more) may be required where there is a mechanical (as well as a chemical) risk i.e. where there is abrasion or puncture potential</li> </ul> <p>Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.</p>
<b>Body protection</b>	See Other protection below
<b>Other protection</b>	No special equipment needed when handling small quantities. <b>OTHERWISE:</b> <ul style="list-style-type: none"> <li>▸ Overalls.</li> <li>▸ Barrier cream.</li> <li>▸ Eyewash unit.</li> </ul>

### Respiratory protection

Type A Filter of sufficient capacity. (AS/NZS 1716 & 1715, EN 143:2000 & 149:2001, ANSI Z88 or national equivalent)

- Cartridge respirators should never be used for emergency ingress or in areas of unknown vapour concentrations or oxygen content.
- The wearer must be warned to leave the contaminated area immediately on detecting any odours through the respirator. The odour may indicate that the mask is not functioning properly, that the vapour concentration is too high, or that the mask is not properly fitted. Because of these limitations, only restricted use of cartridge respirators is considered appropriate.
- Cartridge performance is affected by humidity. Cartridges should be changed after 2 hr of continuous use unless it is determined that the humidity is less than 75%, in which case, cartridges can be used for 4 hr. Used cartridges should be discarded daily, regardless of the length of time used

## SECTION 9 Physical and chemical properties

### Information on basic physical and chemical properties

<b>Appearance</b>	Brown Liquid		
<b>Physical state</b>	Liquid	<b>Relative density (Water = 1)</b>	Not Available
<b>Odour</b>	Not Available	<b>Partition coefficient n-octanol / water</b>	Not Available
<b>Odour threshold</b>	Not Available	<b>Auto-ignition temperature (°C)</b>	Not Available
<b>pH (as supplied)</b>	7-7.2	<b>Decomposition temperature (°C)</b>	Not Available
<b>Melting point / freezing point (°C)</b>	-18	<b>Viscosity (cSt)</b>	Not Available
<b>Initial boiling point and boiling range (°C)</b>	300	<b>Molecular weight (g/mol)</b>	Not Applicable
<b>Flash point (°C)</b>	290	<b>Taste</b>	Not Available
<b>Evaporation rate</b>	Not Available	<b>Explosive properties</b>	Not Available
<b>Flammability</b>	Not Applicable	<b>Oxidising properties</b>	Not Available
<b>Upper Explosive Limit (%)</b>	Not Available	<b>Surface Tension (dyn/cm or mN/m)</b>	Not Available
<b>Lower Explosive Limit (%)</b>	Not Available	<b>Volatile Component (%vol)</b>	Not Available
<b>Vapour pressure (kPa)</b>	Not Available	<b>Gas group</b>	Not Available
<b>Solubility in water</b>	Miscible	<b>pH as a solution (1%)</b>	Not Available
<b>Vapour density (Air = 1)</b>	Not Available	<b>VOC g/L</b>	Not Available

## SECTION 10 Stability and reactivity

<b>Reactivity</b>	See section 7
<b>Chemical stability</b>	<ul style="list-style-type: none"> <li>▸ Unstable in the presence of incompatible materials.</li> <li>▸ Product is considered stable.</li> <li>▸ Hazardous polymerisation will not occur.</li> </ul>
<b>Possibility of hazardous reactions</b>	See section 7
<b>Conditions to avoid</b>	See section 7
<b>Incompatible materials</b>	See section 7
<b>Hazardous decomposition products</b>	See section 5

## SECTION 11 Toxicological information

### Information on toxicological effects

Epiroc Torqueless

Inhaled	The material is not thought to produce adverse health effects or irritation of the respiratory tract (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
Ingestion	The material has <b>NOT</b> been classified by EC Directives or other classification systems as "harmful by ingestion". This is because of the lack of corroborating animal or human evidence.
Skin Contact	The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
Eye	Although the liquid is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may produce transient discomfort characterised by tearing or conjunctival redness (as with windburn).
Chronic	Long-term exposure to the product is not thought to produce chronic effects adverse to the health (as classified by EC Directives using animal models); nevertheless exposure by all routes should be minimised as a matter of course.

Epiroc Torqueless	<b>TOXICITY</b>	<b>IRRITATION</b>
	Not Available	Not Available

**Legend:** 1. Value obtained from Europe ECHA Registered Substances - Acute toxicity 2. Value obtained from manufacturer's SDS. Unless otherwise specified data extracted from RTECS - Register of Toxic Effect of chemical Substances

Acute Toxicity	✗	Carcinogenicity	✗
Skin Irritation/Corrosion	✗	Reproductivity	✗
Serious Eye Damage/Irritation	✗	STOT - Single Exposure	✗
Respiratory or Skin sensitisation	✗	STOT - Repeated Exposure	✗
Mutagenicity	✗	Aspiration Hazard	✗

**Legend:** ✗ – Data either not available or does not fill the criteria for classification  
✔ – Data available to make classification

SECTION 12 Ecological information

Toxicity

Endpoint	Test Duration (hr)	Species	Value	Source
Not Available	Not Available	Not Available	Not Available	Not Available

**Legend:** Extracted from 1. IUCLID Toxicity Data 2. Europe ECHA Registered Substances - Ecotoxicological Information - Aquatic Toxicity 4. US EPA, Ecotox database - Aquatic Toxicity Data 5. ECETOC Aquatic Hazard Assessment Data 6. NITE (Japan) - Bioconcentration Data 7. METI (Japan) - Bioconcentration Data 8. Vendor Data

**DO NOT** discharge into sewer or waterways.

Persistence and degradability

Ingredient	Persistence: Water/Soil	Persistence: Air
	No Data available for all ingredients	No Data available for all ingredients

Bioaccumulative potential

Ingredient	Bioaccumulation
	No Data available for all ingredients

Mobility in soil

Ingredient	Mobility
	No Data available for all ingredients

SECTION 13 Disposal considerations

Waste treatment methods

Product / Packaging disposal	<ul style="list-style-type: none"> <li>▶ <b>DO NOT</b> allow wash water from cleaning or process equipment to enter drains.</li> <li>▶ It may be necessary to collect all wash water for treatment before disposal.</li> <li>▶ In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.</li> <li>▶ Where in doubt contact the responsible authority.</li> <li>▶ Recycle wherever possible or consult manufacturer for recycling options.</li> <li>▶ Consult State Land Waste Authority for disposal.</li> <li>▶ Bury or incinerate residue at an approved site.</li> <li>▶ Recycle containers if possible, or dispose of in an authorised landfill.</li> </ul>
------------------------------	---

SECTION 14 Transport information

Labels Required

Marine Pollutant	NO
------------------	----

**Land transport (TDG): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Air transport (ICAO-IATA / DGR): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Sea transport (IMDG-Code / GGVSee): NOT REGULATED FOR TRANSPORT OF DANGEROUS GOODS**

**Transport in bulk according to Annex II of MARPOL and the IBC code**

Not Applicable

**Transport in bulk in accordance with MARPOL Annex V and the IMSBC Code**

Product name	Group
--------------	-------

**Transport in bulk in accordance with the IGC Code**

Product name	Ship Type
--------------	-----------

## SECTION 15 Regulatory information

### Safety, health and environmental regulations / legislation specific for the substance or mixture

This product has been classified in accordance with the hazard criteria of the Hazardous Products Regulations and the SDS contains all the information required by the Hazardous Products Regulations.

### National Inventory Status

National Inventory	Status
Australia - AIIIC / Australia Non-Industrial Use	Not Available
Canada - DSL	Not Available
Canada - NDSL	Not Available
China - IECSC	Not Available
Europe - EINEC / ELINCS / NLP	Not Available
Japan - ENCS	Not Available
Korea - KECL	Not Available
New Zealand - NZIoC	Not Available
Philippines - PICCS	Not Available
USA - TSCA	Not Available
Mexico - INSQ	Not Available
Vietnam - NCI	Not Available
Russia - FBEPH	Not Available
<b>Legend:</b>	<i>Yes = All CAS declared ingredients are on the inventory No = One or more of the CAS listed ingredients are not on the inventory. These ingredients may be exempt or will require registration.</i>

## SECTION 16 Other information

<b>Revision Date</b>	06/12/2021
<b>Initial Date</b>	06/12/2021

### Other information

Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

The SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

### Definitions and abbreviations

PC - TWA: Permissible Concentration-Time Weighted Average  
 PC - STEL: Permissible Concentration-Short Term Exposure Limit  
 IARC: International Agency for Research on Cancer  
 ACGIH: American Conference of Governmental Industrial Hygienists  
 STEL: Short Term Exposure Limit  
 TEEL: Temporary Emergency Exposure Limit  
 IDLH: Immediately Dangerous to Life or Health Concentrations  
 ES: Exposure Standard  
 OSF: Odour Safety Factor  
 NOAEL :No Observed Adverse Effect Level  
 LOAEL: Lowest Observed Adverse Effect Level  
 TLV: Threshold Limit Value  
 LOD: Limit Of Detection  
 OTV: Odour Threshold Value  
 BCF: BioConcentration Factors  
 BEI: Biological Exposure Index  
 AIIIC: Australian Inventory of Industrial Chemicals  
 DSL: Domestic Substances List  
 NDSL: Non-Domestic Substances List  
 IECSC: Inventory of Existing Chemical Substance in China  
 EINECS: European Inventory of Existing Commercial chemical Substances

**Epiroc Torqueless**

ELINCS: European List of Notified Chemical Substances

NLP: No-Longer Polymers

ENCS: Existing and New Chemical Substances Inventory

KECI: Korea Existing Chemicals Inventory

NZIoC: New Zealand Inventory of Chemicals

PICCS: Philippine Inventory of Chemicals and Chemical Substances

TSCA: Toxic Substances Control Act

TCSI: Taiwan Chemical Substance Inventory

INSQ: Inventario Nacional de Sustancias Químicas

NCI: National Chemical Inventory

FBEPH: Russian Register of Potentially Hazardous Chemical and Biological Substances

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TEL (+61 3) 9572 4700.

# SAFETY DATA SHEET



## DIESEL FUEL

SDS Number: 000003000395

Version: 8.1

Revision Date: 2025/03/13

Print Date: 2025/03/14

### SECTION 1. IDENTIFICATION

- Product name : DIESEL FUEL
- Product code : 12163, 12162, 12161, 12160, 10582, 11803, 11802, 11798, 12016, 11958, 11796, 11771, 11770, 11769, 11768, 11767, 11766, 11612, 11560, 11558, 11555, 11437, 11302, 10979, 10978, 10977, 10976, 10975, 10974, 10973, 10972, 10971, 10970, 10969, 10968, 10966, 10965, 10964, 10786, 10785, 10784, 10783, 10690, 10689, 10687, 10636, 10635, 10626, 10621, 10616, 10610, 10601, 10600, 10598, 10595, 10427, 10041
- Other means of identification : Seasonal Diesel, #2 Diesel, #1 Diesel, #2 Heating Oil, #1 Heating Oil, OSX, D50, Arctic Diesel, Farm Diesel, Marine Diesel, Low Sulphur Diesel, LSD, Ultra Low Sulphur Diesel, ULSD, Mining Diesel, Naval Distillate, Dyed Diesel, Marked Diesel, Coloured Diesel, Furnace special, Biodiesel blend (BX where X is representative of volume %), Renewable Diesel blend (RX where X is represent ative of volume %), Diesel Low Cloud (LC), Marine Gas Oil, Marine Gas Oil Dyed, Type A Diesel, Type B Diesel.

#### Manufacturer or supplier's details

- Company name of supplier : Petro-Canada
- Address : P.O. Box 2844, 150 - 6th Avenue South-West  
Calgary, Alberta T2P 3E3  
Canada, Telephone: 1-866-786-2671
- Emergency telephone : CHEMTREC: 1-800-424-9300 (toll free) or +1 703-527-3887;  
Suncor Energy: +1 403-296-3000

#### Recommended use of the chemical and restrictions on use

- Recommended use : Diesel fuels are distillate fuels suitable for use in high and medium speed internal combustion engines of the compression ignition type.  
Mining diesels, marine diesels, marine diesel oil, marine gas oil and naval distillates may have a higher flash point requirement.

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### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the Hazardous Products Regulations

- Flammable liquids : Category 3
- Acute toxicity (Inhalation) : Category 4

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- Skin irritation : Category 2
- Eye irritation : Category 2B
- Carcinogenicity : Category 2
- Specific target organ toxicity - repeated exposure : Category 2 (Liver, thymus, Bone)
- Aspiration hazard : Category 1

### GHS label elements

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H226 Flammable liquid and vapor.  
H304 May be fatal if swallowed and enters airways.  
H315 + H320 Causes skin and eye irritation.  
H332 Harmful if inhaled.  
H351 Suspected of causing cancer.  
H373 May cause damage to organs (Liver, thymus, Bone) through prolonged or repeated exposure.

Precautionary Statements :

#### Prevention:

- P201 Obtain special instructions before use.
- P202 Do not handle until all safety precautions have been read and understood.
- P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
- P233 Keep container tightly closed.
- P240 Ground and bond container and receiving equipment.
- P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
- P242 Use non-sparking tools.
- P243 Take action to prevent static discharges.
- P260 Do not breathe mist or vapors.
- P264 Wash skin thoroughly after handling.
- P271 Use only outdoors or in a well-ventilated area.
- P280 Wear protective gloves/ protective clothing/ eye protection/ face protection/ hearing protection.

#### Response:

- P301 + P310 IF SWALLOWED: Immediately call a POISON CENTER/ doctor.
- P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
- P304 + P340 + P312 IF INHALED: Remove person to fresh air

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and keep comfortable for breathing. Call a POISON CENTER/ doctor if you feel unwell.  
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308 + P313 IF exposed or concerned: Get medical advice/ attention.  
P331 Do NOT induce vomiting.  
P332 + P313 If skin irritation occurs: Get medical advice/ attention.  
P337 + P313 If eye irritation persists: Get medical advice/ attention.  
P362 + P364 Take off contaminated clothing and wash it before reuse.  
P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.

### Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.  
P405 Store locked up.

### Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

### Other hazards

None known.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance / Mixture : Mixture

### Components

Chemical name	Common Name/Synonym	CAS-No.	Concentration (% w/w)
Fuels, diesel; Gasoil — unspecified	Fuels, diesel; Gasoil — unspecified	68334-30-5	25 - 100
Alkanes, C10-20-branched and linear	Alkanes, C10-20-branched and linear	928771-01-1	<= 75
Fatty acids, C14-18 and C14-18-unsatd., Me esters	Fatty acids, C14-18 and C14-18-unsatd., Me esters	129756-24-7	<= 20
Fuel oil No. 2	Fuel oil No. 2	68476-30-2	<= 0.2

## SECTION 4. FIRST AID MEASURES

If inhaled : Move to fresh air.  
Artificial respiration and/or oxygen may be necessary.  
Seek medical advice.

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In case of skin contact	:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash skin thoroughly with soap and water or use recognized skin cleanser. Wash clothing before reuse. Seek medical advice.
In case of eye contact	:	Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Obtain medical attention.
If swallowed	:	Rinse mouth with water. DO NOT induce vomiting unless directed to do so by a physician or poison control center. Never give anything by mouth to an unconscious person. Seek medical advice.
Most important symptoms and effects, both acute and delayed	:	Harmful if inhaled. Respiratory, skin and eye irritation; nausea; cancer.
An indication of immediate medical attention and special treatment needed, if necessary	:	Treat symptomatically. For specialist advice physicians should contact the Poisons Information Service.

### SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	:	Dry chemical Carbon dioxide (CO <sub>2</sub> ) Water fog. Foam
Unsuitable extinguishing media	:	Do NOT use water jet.
Specific hazards during fire fighting	:	Cool closed containers exposed to fire with water spray.
Hazardous combustion products	:	Carbon oxides (CO, CO <sub>2</sub> ), nitrogen oxides (NO <sub>x</sub> ), sulphur oxides (SO <sub>x</sub> ), smoke and irritating vapours as products of incomplete combustion.
Further information	:	Prevent fire extinguishing water from contaminating surface water or the ground water system.
Special protective equipment for fire-fighters	:	Wear self-contained breathing apparatus for firefighting if necessary.

### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures	:	For personal protection see section 8. Ensure adequate ventilation. Evacuate personnel to safe areas.
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Material can create slippery conditions.  
Mark the contaminated area with signs and prevent access to unauthorized personnel.  
Only qualified personnel equipped with suitable protective equipment may intervene.

Environmental precautions : If the product contaminates rivers and lakes or drains inform respective authorities.

Methods and materials for containment and cleaning up : Prevent further leakage or spillage if safe to do so.  
Remove all sources of ignition.  
Soak up with inert absorbent material.  
Non-sparking tools should be used.  
Ensure adequate ventilation.  
Contact the proper local authorities.

### SECTION 7. HANDLING AND STORAGE

Advice on safe handling : For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
Use only with adequate ventilation.  
In case of insufficient ventilation, wear suitable respiratory equipment.  
Avoid spark promoters. Ground/bond container and equipment. These alone may be insufficient to remove static electricity.  
Avoid contact with skin, eyes and clothing.  
Do not ingest.  
Keep away from heat and sources of ignition.  
Keep container closed when not in use.

Conditions for safe storage : Store in original container.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Keep in a dry, cool and well-ventilated place.  
Keep in properly labeled containers.  
To maintain product quality, do not store in heat or direct sunlight.  
Ensure the storage containers are grounded/bonded.

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Fuels, diesel; Gasoil — unspecified	68334-30-5	TWA	100 mg/m <sup>3</sup> (total hydrocarbons)	CA AB OEL
		TWA (inhal-)	100 mg/m <sup>3</sup>	CA BC OEL

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		able fraction and vapour)	(total hydrocarbons)	
		TWAEV (inhalable fraction and vapour)	100 mg/m <sup>3</sup> (total hydrocarbons)	CA QC OEL
		TWA (Inhalable fraction and vapor)	100 mg/m <sup>3</sup> (total hydrocarbons)	ACGIH
Fuel oil No. 2	68476-30-2	TWA (Inhalable fraction and vapor)	100 mg/m <sup>3</sup> (total hydrocarbons)	CA AB OEL
		TWA (Inhalable fraction and vapor)	100 mg/m <sup>3</sup> (total hydrocarbons)	CA BC OEL
		TWAEV (Inhalable fraction and vapor)	100 mg/m <sup>3</sup> (total hydrocarbons)	CA QC OEL
		TWA (Inhalable fraction and vapor)	100 mg/m <sup>3</sup> (total hydrocarbons)	CA ON OEL
		TWA (Inhalable fraction and vapor)	100 mg/m <sup>3</sup> (total hydrocarbons)	ACGIH

**Engineering measures** : Adequate ventilation to ensure that Occupational Exposure Limits are not exceeded.  
 Use only in well-ventilated areas.  
 Ensure that eyewash station and safety shower are proximal to the work-station location.

**Personal protective equipment**

Respiratory protection : Concentration in air determines protection needed.  
 Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Filter type : organic vapour cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure, air-supplied respirator if there is any potential for uncontrolled release, exposure levels are unknown, or any other circumstances where air-purifying respirators may not provide adequate protection.

Hand protection  
 Material : neoprene, nitrile, polyvinyl alcohol (PVA), Viton(R). Consult your PPE provider for breakthrough times and the specific glove that is best for you based on your use patterns. It should be realized that eventually any material regardless of

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their imperviousness, will get permeated by chemicals. Therefore, protective gloves should be regularly checked for wear and tear. At the first signs of hardening and cracks, they should be changed.

- Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Eye protection : Wear safety glasses with side shields or goggles. Wear face-shield if splashing hazard is likely. Chemical splash goggles and a full-face shield should be worn when handling this material.
- Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
- Protective measures : Wash contaminated clothing before re-use.
- Hygiene measures : Remove and wash contaminated clothing and gloves, including the inside, before re-use. Wash face, hands and any exposed skin thoroughly after handling.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Physical state : Bright oily liquid.
- Color : Clear to yellow (This product may be dyed red for taxation purposes)
- Odor : Mild petroleum oil like.
- pH : No data available
- Melting point and freezing point : No data available
- Boiling point, or initial boiling point and boiling range : 150 - 371 °C
- Flash point : > 40 °C  
Method: closed cup  
Marine Gas Oil/Naval Distillate: 60°C min  
Mining Diesel: 52°C min  
All other Diesel fuels: 40°C min
- Flammability : Flammable liquid
- Upper explosion limit / Upper flammability limit : 6 %(V)

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Lower explosion limit / Lower flammability limit	:	0.7 %(V)
Vapor pressure	:	7.5 mmHg (20 °C)
Relative vapor density	:	4.5
Relative density	:	0.8 - 0.88
Density	:	No data available
Solubility(ies)	:	
Water solubility	:	insoluble
Partition coefficient: n-octanol/water	:	No data available
Autoignition temperature	:	204 °C
Decomposition temperature	:	No data available
Viscosity	:	
Viscosity, kinematic	:	1.3 - 4.1 cSt ( 40 °C)
Particle characteristics	:	
Particle size	:	Not applicable

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### SECTION 10. STABILITY AND REACTIVITY

Reactivity	:	Stable at normal ambient temperature and pressure.
Chemical stability	:	Stable under normal conditions.
Possibility of hazardous reactions	:	Hazardous polymerization does not occur.
Conditions to avoid	:	Extremes of temperature and direct sunlight.
Incompatible materials	:	Reactive with oxidising agents and acids.
Hazardous decomposition products	:	May release COx, NOx, SOx, smoke and irritating vapours when heated to decomposition.

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### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

Eye contact  
Ingestion  
Inhalation  
Skin contact

#### Acute toxicity

Harmful if inhaled.

#### Product:

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- Acute oral toxicity : Remarks: Based on available data, the classification criteria are not met.
- Acute inhalation toxicity : Acute toxicity estimate: 11 mg/L  
Exposure time: 4 h  
Test atmosphere: vapor  
Method: Calculation method
- Acute dermal toxicity : Remarks: Based on available data, the classification criteria are not met.

### **Components:**

#### **Fuels, diesel; Gasoil — unspecified:**

- Acute oral toxicity : LD50 (Rat): 7,500 mg/kg
- Acute inhalation toxicity : LC50 (Rat): 4.1 mg/l  
Exposure time: 4 h  
Test atmosphere: vapor
- Acute dermal toxicity : LD50 (Mouse): 24,500 mg/kg

#### **Fuel oil No. 2:**

- Acute oral toxicity : LD50 (Rat): 12,000 mg/kg

#### **Skin corrosion/irritation**

Causes skin irritation.

#### **Serious eye damage/eye irritation**

Causes eye irritation.

#### **Respiratory or skin sensitization**

##### **Skin sensitization**

Based on available data, the classification criteria are not met.

##### **Respiratory sensitization**

Based on available data, the classification criteria are not met.

##### **Germ cell mutagenicity**

Based on available data, the classification criteria are not met.

##### **Carcinogenicity**

Suspected of causing cancer.

##### **Reproductive toxicity**

Based on available data, the classification criteria are not met.

##### **STOT-single exposure**

Based on available data, the classification criteria are not met.

##### **STOT-repeated exposure**

May cause damage to organs (Liver, thymus, Bone) through prolonged or repeated exposure.

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### Aspiration toxicity

May be fatal if swallowed and enters airways.

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## SECTION 12. ECOLOGICAL INFORMATION

### Ecotoxicity

#### Product:

Toxicity to fish : Remarks: No data available

Toxicity to daphnia and other aquatic invertebrates : Remarks: No data available

Toxicity to algae/aquatic plants : Remarks: No data available

Toxicity to microorganisms : Remarks: No data available

### Persistence and degradability

#### Product:

Biodegradability : Remarks: No data available

### Bioaccumulative potential

No data available

### Mobility in soil

No data available

### Other adverse effects

No data available

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## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

- Waste from residues : The product should not be allowed to enter drains, water courses or the soil. Offer surplus and non-recyclable solutions to a licensed disposal company. Waste must be classified and labeled prior to recycling or disposal. Send to a licensed waste management company. Dispose of as hazardous waste in compliance with local and national regulations. Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.
- Contaminated packaging : Contact local or business unit authorities for guidance on disposal of product.

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### SECTION 14. TRANSPORT INFORMATION

#### International Regulations

##### IATA-DGR

UN/ID No. : UN 1202  
Proper shipping name : Diesel fuel  
Class : 3  
Packing group : III  
Labels : Flammable Liquids  
Packing instruction (cargo aircraft) : 366

##### IMDG-Code

UN number : UN 1202  
Proper shipping name : DIESEL FUEL  
Class : 3  
Packing group : III  
Labels : 3  
EmS Code : F-E, S-E  
Marine pollutant : yes

#### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied.

#### Domestic regulation

##### TDG

UN number : UN 1202  
Proper shipping name : DIESEL FUEL  
Class : 3  
Packing group : III  
Labels : 3  
ERG Code : 128  
Marine pollutant : yes

#### Special precautions for user

The transport classification(s) provided herein are for informational purposes only, and solely based upon the properties of the unpackaged material as it is described within this Safety Data Sheet. Transportation classifications may vary by mode of transportation, package sizes, and variations in regional or country regulations.

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### SECTION 15. REGULATORY INFORMATION

**NPRI Components** : Solvent naphtha (petroleum), heavy arom.; Kerosine — unspecified  
naphthalene  
1,2,4-trimethylbenzene  
toluene  
propan-2-ol  
methanol

#### The ingredients of this product are reported in the following inventories:

DSL : All components of this product are on the Canadian DSL

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### Canadian lists

No substances are subject to a Significant New Activity Notification.

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## SECTION 16. OTHER INFORMATION

### Full text of other abbreviations

ACGIH	:	USA. ACGIH Threshold Limit Values (TLV)
CA AB OEL	:	Canada. Alberta, Occupational Health and Safety Code (table 2: OEL)
CA BC OEL	:	Canada. British Columbia OEL
CA ON OEL	:	Ontario Table of Occupational Exposure Limits made under the Occupational Health and Safety Act.
CA QC OEL	:	Québec. Regulation respecting occupational health and safety, Schedule 1, Part 1: Permissible exposure values for airborne contaminants
ACGIH / TWA	:	8-hour time weighted average
CA AB OEL / TWA	:	8-hour time weighted average
CA BC OEL / TWA	:	8-hour time weighted average
CA ON OEL / TWA	:	8-hour time weighted average
CA QC OEL / TWA	:	Time-weighted average exposure value

AIIC - Australian Inventory of Industrial Chemicals; ANTT - National Agency for Transport by Land of Brazil; ASTM - American Society for the Testing of Materials; bw - Body weight; CMR - Carcinogen, Mutagen or Reproductive Toxicant; DIN - Standard of the German Institute for Standardisation; DSL - Domestic Substances List (Canada); ECx - Concentration associated with x% response; ELx - Loading rate associated with x% response; EmS - Emergency Schedule; ENCS - Existing and New Chemical Substances (Japan); ErCx - Concentration associated with x% growth rate response; ERG - Emergency Response Guide; GHS - Globally Harmonized System; GLP - Good Laboratory Practice; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; IBC - International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk; IC50 - Half maximal inhibitory concentration; ICAO - International Civil Aviation Organization; IECSC - Inventory of Existing Chemical Substances in China; IMDG - International Maritime Dangerous Goods; IMO - International Maritime Organization; ISHL - Industrial Safety and Health Law (Japan); ISO - International Organisation for Standardization; KECI - Korea Existing Chemicals Inventory; LC50 - Lethal Concentration to 50 % of a test population; LD50 - Lethal Dose to 50% of a test population (Median Lethal Dose); MARPOL - International Convention for the Prevention of Pollution from Ships; n.o.s. - Not Otherwise Specified; Nch - Chilean Norm; NO(A)EC - No Observed (Adverse) Effect Concentration; NO(A)EL - No Observed (Adverse) Effect Level; NOELR - No Observable Effect Loading Rate; NOM - Official Mexican Norm; NTP - National Toxicology Program; NZIoC - New Zealand Inventory of Chemicals; OECD - Organization for Economic Co-operation and Development; OPPTS - Office of Chemical Safety and Pollution Prevention; PBT - Persistent, Bioaccumulative and Toxic substance; PICCS - Philippines Inventory of Chemicals and Chemical Substances; (Q)SAR - (Quantitative) Structure Activity Relationship; REACH - Regulation (EC) No 1907/2006 of the European Parliament and of the Council concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals; SADT - Self-Accelerating Decomposition Temperature; SDS - Safety Data Sheet; TCSI - Taiwan Chemical Substance Inventory; TDG - Transportation of Dangerous Goods; TECl - Thailand Existing Chemicals Inventory; TSCA - Toxic Substances Control Act (United States); UN - United Nations; UNRTDG - United Nations Recom-

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recommendations on the Transport of Dangerous Goods; vPvB - Very Persistent and Very Bioaccumulative; WHMIS - Workplace Hazardous Materials Information System

Revision Date : 2025/03/13

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

CA / EN

# SAFETY DATA SHEET



## JET A/A-1 AVIATION TURBINE FUEL

SDS Number 0000030000

Version 00

Revision Date 004000

Print Date 004000

### SECTION 1. IDENTIFICATION

- Product name  Jet Aviation Turbine Fuel
- Product code  000003
- Other means of identification  Jet Aviation Turbine Kerosene (Kerosene)

#### Manufacturer or supplier's details

- Company name of supplier  Suncor Energy Inc.
- Address  P.O. Box 44000 6th Avenue SW  
Calgary Alberta T2P 3E3  
Canada Phone 4036676676
- Emergency telephone  1-800-387-3000 or 7037373  
Suncor Energy 403663000

#### Recommended use of the chemical and restrictions on use

- Recommended use  Used as aviation turbine fuel. May contain a system icing inhibitor. In the arctic Jet Aviation may also be used as diesel fuel. It contains a friction additive and sealing oil.

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the Hazardous Products Regulations

- Flammable liquids  Category 3
- Skin irritation  Category 2
- Reproductive toxicity  Category 2
- Specific target organ toxicity - single exposure  Category 3 (Central nervous system)
- Respiratory hazard  Category 2

#### GHS label elements

- Label pictograms

# SAFETY DATA SHEET



## JET A/A-1 AVIATION TURBINE FUEL

SDS Number 0000030000

Version 00

Revision Date 00040000

Print Date 00040000

### Signal Word

Danger

### Hazard Statements

- 06 Flammable liquid and vapor
- 304 May be fatal if swallowed and enters airways
- 333 Causes skin irritation
- 336 May cause drowsiness or dizziness
- 360 Suspected of damaging fertility or the unborn child

### Precautionary Statements

- Prevention:**
  - 00 Obtain special instructions before use
  - 00 Do not handle in an unventilated area unless a safe procedure has been read and understood
  - 00 Keep away from heat, sparks, open flames and other ignition sources. No smoking
  - 33 Keep container tightly closed
  - 40 Ground and bond container and receiving equipment
  - 40 Use explosion proof electrical equipment
  - 40 Use non-sparking tools
  - 43 Take action to prevent static discharges
  - 60 Avoid breathing mist or vapors
  - 64 Wash skin thoroughly after handling
  - 70 Use only outdoors or in a well-ventilated area
  - 00 Wear protective gloves, protective clothing, eye protection, face protection, hearing protection

### Response:

- 300 P300 I SWALLOWED Immediately call a POISON CENTER or doctor
- 303 P360 P303 I ON SKIN or hair Take off immediately any contaminated clothing. Rinse skin with water
- 304 P340 P300 I INHALED Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell
- 300 P303 I enclosed or concerned Get medical advice attention
- 330 Do NOT induce vomiting
- 330 P303 I skin irritation occurs Get medical advice attention
- 360 P364 Take off contaminated clothing and wash before reuse
- 370 P370 In case of fire Use dry sand/dry chemical or a CO2 extinguisher

### Storage:

- 403 P33 Store in a well-ventilated place. Keep container tightly closed
- 403 P30 Store in a well-ventilated place. Keep cool
- 40 Store locked

### Disposal:

- 00 Dispose of contents/container to an approved waste disposal unit

# SAFETY DATA SHEET



## JET A/A-1 AVIATION TURBINE FUEL

SDS Number 0000030000

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### Other hazards

None known

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance Mixture      Mixture

#### Components

Chemical Name	Common Name/Synonym	CAS No.	Concentration % w/w
Kerosine (Jet-A1) Straight-run kerosine	Kerosine (Jet-A1) Straight-run kerosine	000016	
Methylcyclopentane	Methylcyclopentane	773	0

### SECTION 4. FIRST AID MEASURES

- Inhaled
  - Move to fresh air
  - Artificial respiration and/or oxygen may be necessary
  - Seek medical advice
- In case of skin contact
  - In case of contact immediately wash skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes
  - Wash skin thoroughly with soap and water or use recognized skin cleanser
  - Wash clothing before reuse
  - Seek medical advice
- In case of eye contact
  - Remove contact lenses
  - Rinse immediately with plenty of water for at least 15 minutes under the eyelids for at least 15 minutes
  - Obtain medical attention
- Swallowed
  - Rinse mouth with water
  - DO NOT induce vomiting unless directed to do so by a physician or poison control center
  - Never give anything by mouth to an unconscious person
  - Seek medical advice
- Mortality or other symptoms and effects both acute and delayed
  - Inhalation may cause central nervous system effects
  - Symptoms and signs include headache, dizziness, fatigue, muscular weakness, drowsiness and in extreme cases, loss of consciousness
  - Causes skin irritation
  - Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea

# SAFETY DATA SHEET



## JET A/A-1 AVIATION TURBINE FUEL

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- In indication of immediate medical attention and special treatment needed if necessary
- Area symptomatically Contact poison treatment special is immediately if large quantities have been ingested or inhaled

### SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media
  - Dry chemical
  - Carbon dioxide (CO<sub>2</sub>)
  - Water fog
  - Foam
- Unsuitable extinguishing media
  - Do NOT use water
- Specific hazards during fire fighting
  - Closed containers exposed to fire will water spray
- Hazardous combustion products
  - Carbon oxides (CO), CO<sub>2</sub>, nitrogen oxides (NO<sub>x</sub>), sulfur oxides (SO<sub>x</sub>), hydrogen sulfide (H<sub>2</sub>S), hydrocarbons, smoke and irritating vapors as products of incomplete combustion
- Other information
  - Prevent fire extinguishing water from contaminating surface water or the ground water system
- Special protective equipment for firefighters
  - Wear self-contained breathing apparatus for fire fighting if necessary

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal recommendations for protection of the environment and emergency procedures
  - For personal protection see section 8
  - Ensure adequate ventilation
  - Exclude personnel to safe areas
  - Material can create slippery conditions
  - Mark the contaminated area with signs and prevent access to unauthorized personnel
  - Only qualified personnel equipped with suitable protective equipment may intervene
- Environmental recommendations
  - Do not allow contaminated run-off and lakes or drains in storm reservoirs or ditches
- Methods and materials for containment and cleaning
  - Prevent further leakage or spillage if safe to do so
  - Remove all sources of ignition

# SAFETY DATA SHEET



## JET A/A-1 AVIATION TURBINE FUEL

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Soak with inner absorbent material  
Non-sparking tools should be used  
Ensure adequate ventilation  
Contact the proper local authorities

### SECTION 7. HANDLING AND STORAGE

#### Precaution on safe handling

- For personal protection see section 8
- Smoking, eating and drinking should be prohibited in the application area
- Use only with adequate ventilation
- In case of insufficient ventilation wear suitable respiratory equipment
- Avoid spark promoters, ground bond container and equipment
- These alone may be insufficient to remove static electricity
- Avoid contact with skin, eyes and clothing
- Do not ingest
- Keep away from heat and sources of ignition
- Keep container closed when not in use

#### Conditions for safe storage

- Store in original container
- Containers which are opened must be carefully resealed and kept tightly closed to prevent leakage
- Keep in a dry, cool and well-ventilated place
- Keep in properly labeled containers
- To maintain productivity do not store in heat or direct sunlight

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Contains no substances with occupational exposure limits

#### Engineering measures

- Adequate ventilation to ensure that occupational exposure limits are not exceeded
- Use only in well-ventilated areas
- Ensure that eye wash station and safety shower are readily available at the workstation location

#### Personal protective equipment

##### Respiratory protection

- Concentration in air determines protection needed
- Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines
- Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator

##### Other type

- NIOSH approved air-purifying respirator with an organic

# SAFETY DATA SHEET



## JET A/A-1 AVIATION TURBINE FUEL

SDS Number 0000030000

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Canister or cartridge may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive-pressure air-supplied respirator if there is any potential for uncontrolled release. Exposure levels are unknown for any other circumstances where air-purifying respirators may not provide adequate protection.

Hand Protection  
Material

Use any type of PPE in accordance with the manufacturer's instructions for break-through times and the specific glove material based on your use patterns. It should be realized that eventually any material regardless of their impermeability will get permeated by chemicals. Therefore protective gloves should be regularly checked for wear and tear. The signs of hardening and cracks they should be changed.

Remarks

Chemical resistance in impermeable gloves complying with an approved standard should be worn at all times when handling chemicals. A risk assessment indicates this is necessary.

Eye Protection

Wear safety goggles

Skin and body Protection

Choose body protection in relation to its type to the concentration and amount of dangerous substances and to the specific work place.

Protective measures

Was contaminated clothing before reuse.

Hygiene measures

Remove and wash contaminated clothing and gloves including the inside before reuse. Wash face and hands and any exposed skin thoroughly after handling.

### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state

Clear liquid

Color

Clear and colorless

Odor

Kerosene-like

No data available

Melting point and freezing point

-180 °C

# SAFETY DATA SHEET



## JET A/A-1 AVIATION TURBINE FUEL

SDS Number 0000030000

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Boiling point or initial boiling point and boiling range  40-300 °C

Flash point  3 °C

Method available

Flammability  flammable liquid

Upper explosion limit (flammability limit)  0-0

Lower explosion limit (flammability limit)  0-7

vapour pressure  0.000 mmHg @ 0 °C

Relative vapour density  4

Relative density  0.77-0.84 @ 0 °C

Density  No data available

Solubilities

Water solubility  No data available

Partition coefficient n-octanol/water  No data available

Autoignition temperature  0 °C

Decomposition temperature  No data available

Viscosity

viscosity kinematic  0-000 cSt @ 40 °C

Particle characteristics

Particle size  No specification

### SECTION 10. STABILITY AND REACTIVITY

Reactivity  No dangerous reaction known under conditions of normal use

Chemical stability  Stable under normal conditions

Possibility of hazardous reactions  Hazardous polymerization does not occur

# SAFETY DATA SHEET



## JET A/A-1 AVIATION TURBINE FUEL

SDS Number 0000030000

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Revision Date 00040000

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- Conditions to avoid
  - Extremes of temperature and direct sunlight
- Incompatible materials
  - Reactive with oxidising agents, acids, alkalis, metals and oxygenated compounds
- Cardinal decomposition products
  - May release CO, NO, SO<sub>2</sub> smoke and irritating vapours when heated to decomposition

### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

- Eye contact
- Ingestion
- Inhalation
- Skin contact

#### Acute toxicity

Based on available data the classification criteria are not met

#### Product:

- Oral toxicity
  - Oral toxicity estimate 0 mg
  - Exposure time 4 h
  - Respiratory tract sensitization
  - Method: Calculation method
- Dermal toxicity
  - Oral toxicity estimate 0000 mg/kg
  - Method: Calculation method

#### Components:

##### Kerosine (petroleum); Straight run kerosine:

- Oral toxicity
  - LD<sub>50</sub> 0000 mg/kg
- Inhalation toxicity
  - LC<sub>50</sub> 0000 mg
  - Exposure time 4 h
  - Respiratory tract sensitization
- Dermal toxicity
  - LD<sub>50</sub> 0000 mg/kg

#### Skin corrosion/irritation

Causes skin irritation

#### Serious eye damage/eye irritation

Based on available data the classification criteria are not met

#### Respiratory or skin sensitization

#### Skin sensitization

Based on available data the classification criteria are not met



# SAFETY DATA SHEET



## JET A/A-1 AVIATION TURBINE FUEL

SDS Number 0000030000

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Revision Date 00040000

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### SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

Waste from residues

- The products should not be allowed to enter drains, water courses or the soil
- Other solids and non-recyclable solutions to a licensed disposal company
- Waste must be classified and labeled prior to recycling or disposal
- Send to a licensed waste management company
- Dispose of product residue in accordance with the instructions of the person responsible for waste disposal

Contaminated packaging

- Do not reuse empty containers
- Contact local or business authorities for guidance on disposal of product

### SECTION 14. TRANSPORT INFORMATION

#### International Regulations

##### IATA-DGR

- IATA ID No  0063
- Proper shipping name  Jet Aviation turbine engine
- Class  3
- Packing group  III
- Labels  Flammable liquids
- Packing instruction (cargo aircraft)  366

##### IMDG-Code

- IATA ID No  0063
- Proper shipping name  JET AVIATION TURBINE ENGINE
- Class  3
- Packing group  III
- Labels  3
- IATA Code  0063
- Marine contaminant  yes

#### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for products as specified

#### Domestic regulation

##### TDG

- IATA ID No  0063
- Proper shipping name  JET AVIATION TURBINE ENGINE
- Class  3
- Packing group  III
- Labels  3





# SAFETY DATA SHEET

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## GASOLINE, UNLEADED

SDS Number 000003000644

Version 0

Revision Date 000000

Print Date 000003

### SECTION 1. IDENTIFICATION

- Product name:  GASOLINE UNLEADED
- Product code:  4000000000000000000000030000000000000000070047400473004600040000000000000070006000400003
- Other means of identification:  B7 Regular unleaded Gasoline S Grade Mid Grade Plus Saver Supreme Saver Clean Regular Clean Plus Clean Premium marked or dyed gasoline BOB Bendslock or Oxygenate Blending Conventional Gasoline R M S P additive Denatran B low volatility blend Tra BR low volatility blend regular

#### Manufacturer or supplier's details

- Company name of supplier:  Petro-Canada
- Address:  P.O. Box 44000 6th Avenue South West Calgary Alberta T2P 3E3 Canada Telephone 667-6667
- Emergency telephone:  1-800-387-3000 or 703-7307 or CRIS Incor Energy 403-6300

#### Recommended use of the chemical and restrictions on use

- Recommended use:  Unleaded gasoline is used in spark ignition engines including motor vehicles on board and off board boats, engines, small engines such as chain saws and lawn mowers and recreational vehicles.

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with the Hazardous Products Regulations

- Flammable liquids:  Category 2
- Skin irritation:  Category 2
- Germ cell mutagenicity:  Category 2B
- Carcinogenicity:  Category 2
- Reproductive toxicity:  Category 2
- Specific target organ toxicity - single exposure:  Category 3 - Central nervous system
- Specific target organ toxicity - repeated exposure in Carcinogenicity:  Category 2 - Hematopoietic system

# SAFETY DATA SHEET

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## GASOLINE, UNLEADED

SDS Number 000003000644

Version 0

Revision Date 000000

Print Date 0000003

Classification Card

Category

### GHS label elements

Card Pictograms



Signal Word

Danger

Card Statements

- 4 Extremely flammable liquid and gas
- 304 May be aspirated and enters airways
- 333 Causes skin irritation
- 336 May cause drowsiness or dizziness
- 340 May cause genetic defects
- 350 May cause cancer
- 360 Suspected of damaging fertility or the unborn child
- 373 Causes damage to organs through prolonged or repeated exposure

Precautionary Statements

- Prevention:**
  - P01 Obtain special instructions before use
  - P02 Do not handle in an unsafe manner. Precautions should be read and understood
  - P03 Keep away from heat, sparks, open flames and other ignition sources. No smoking
  - P233 Keep container tightly closed
  - P240 Ground and bond container and receiving equipment
  - P241 Use explosion proof electrical equipment
  - P242 Use non-sparking tools
  - P243 Take action to prevent static discharges
  - P260 Do not breathe mist or fumes
  - P273 Wash skin thoroughly after handling
  - P271 Do not eat, drink or smoke when using this product
  - P272 Use only outdoors or in a well-ventilated area
  - P280 Wear protective gloves, eye protection, face protection
- Response:**
  - P301 + P310 If SWALLOWED: Immediately call a POISON CENTER or doctor
  - P303 + P361 + P353 If ON SKIN (or hair): Take off immediately any contaminated clothing. Rinse skin with water
  - P304 + P340 + P330 If INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor if you feel unwell
  - P302 + P333 If exposed or concerned: Get medical advice/attention
  - P332 Do NOT induce vomiting

# SAFETY DATA SHEET

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## GASOLINE, UNLEADED

SDS Number 000003000644

Version 000

Revision Date 00000000

Print Date 00000003

P330 P303 In skin irritation occurs Get medical advice Take action

P360 P364 Take off contaminated clothing and wash before reuse

P370 P371 In case of fire Use dry sand dry chemical or alcohol resistant foam to extinguish

### Storage:

P403 P233 Store in a well-ventilated place Keep container tightly closed

P403 P233 Store in a well-ventilated place Keep cool

P403 Store locked

### Disposal:

P201 Dispose of contents/container to an approved waste disposal facility

### Other hazards

None known

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance Name

Mixture

### Components

Chemical Name	Common Name/Synonym	CAS No	Concentration % w/w
Gasoline low boiling Unspecified	Gasoline low boiling Unspecified	60000	0-100
Toluene	Toluene	108-90-3	0-40
Benzene	Benzene	71-43-2	0.006-0.01
Ethanol	Ethanol	64-17-5	0-0.3
Methanol	Methanol	67-56-2	0-0.01

## SECTION 4. FIRST AID MEASURES

Inhaled

- Move to fresh air
- Artificial respiration and/or oxygen may be necessary
- Seek medical advice

In case of skin contact

- In case of contact immediately wash skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes

Wash skin thoroughly with soap and water or use recognized skin cleanser

Wash clothing before reuse

Seek medical advice

In case of eye contact

- Remove contact lenses
- Rinse immediately with plenty of water for at least 15 minutes under the eyelids
- For at least 15 minutes
- Obtain medical attention

# SAFETY DATA SHEET

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## GASOLINE, UNLEADED

SDS Number 000003000644

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- swallowed
  - Rinse mouth with water
  - DO NOT induce vomiting unless directed to do so by a physician or poison control center
  - Never give anything by mouth to an unconscious person
  - Seek medical advice
- Mosquito or other symptoms and effects both acute and delayed
  - Respiratory, skin and eye irritation, headache
  - Inhalation may cause central nervous system effects
  - Ingestion may cause gastrointestinal irritation, headache, vomiting and diarrhea
  - Chronic exposure to benzene may result in increased risk of leukemia and other blood disorders
- In indication of immediate medical attention and special treatment needed if necessary
  - Treat symptomatically
  - Contact poison treatment specialists immediately if large quantities have been ingested or inhaled

### SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media
  - Dry chemical
  - Carbon dioxide (CO<sub>2</sub>)
  - Water fog
  - foam
- Unsuitable extinguishing media
  - Do NOT use water
- Specific hazards during firefighting
  - Closed containers exposed to fire with water spray
- Hazardous combustion products
  - Carbon oxides (CO, CO<sub>2</sub>), nitrogen oxides (NO, NO<sub>2</sub>), cyanide, aromatic hydrocarbons, benzenes, aldehydes, ketones, smoke and irritating vapors as products of incomplete combustion
- Other information
  - Prevent fire extinguishing water from contaminating surface water or the ground water system
- Special protective equipment for firefighters
  - Wear self-contained breathing apparatus and appropriate eye protection
  - Wear a positive pressure supplied air respirator with full face piece

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures
  - For personal protection see section 8
  - Ensure adequate ventilation
  - Exclude personnel to safe areas
  - Material can create slippery conditions
  - Mark the contaminated area with signs and prevent access to unauthorized personnel
  - Only qualified personnel equipped with suitable protective equipment may intervene

# SAFETY DATA SHEET

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## GASOLINE, UNLEADED

SDS Number 000003000644

Version 000

Revision Date 00000000

Print Date 00000003

Environmental recommendations  
 Do not pour or drain into storm sewers or drains in storm basins or catch basins

Methods and materials for containment and cleaning  
 Prevent further leakage or spillage if safe to do so  
 Remove all sources of ignition  
 Soak up with inert absorbent material  
 Non-sparking tools should be used  
 Ensure adequate ventilation  
 Contact your local authorities

### SECTION 7. HANDLING AND STORAGE

Advice on safe handling  
 For personal protection see section 8  
 Smoking, eating and drinking should be prohibited in the application area  
 Use only with adequate ventilation  
 In case of insufficient ventilation wear suitable respiratory equipment  
 Do not spark, smokers, ground bond container and equipment  
 These alone may be insufficient to remove static electricity  
 Do not contact with skin, eyes and clothing  
 Do not ingest  
 Keep away from heat and sources of ignition  
 Keep container closed when not in use

Conditions for safe storage  
 Store in original container  
 Containers which are opened must be carefully resealed and kept upright to prevent leakage  
 Keep in a dry, cool and well-ventilated place  
 Keep in properly labeled containers  
 Do not store in heat or direct sunlight

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Ingredients with workplace control parameters

Component	CAS No.	Case type form of exposure	Control parameters Permissible concentration	Basis
Gasoline low boiling component not specified	60000	W	300 ppm	CEBO
		S	100 ppm	CEBO
		W	300 ppm	CEBCO
		S	100 ppm	CEBCO
		W	300 ppm	CGI
		S	100 ppm	CGI
Benzene	70003	W	10 ppm	CEBCO
		W	10 ppm	CECO
		W	10 ppm	CEBO
		W	10 ppm	CGI

# SAFETY DATA SHEET

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## GASOLINE, UNLEADED

SDS Number 000003000644

Version 000

Revision Date 00000000

Print Date 00000003

benzene	7443	W	0 ppm	CB O
		S	ppm	CB O
		W	0 ppm	ON O
		S	ppm	ON O
		W	0 ppm	CO
		S	ppm	CO
		W	0 ppm	BO
		S	ppm	BO
		W	0 ppm	CGI
		S	0 ppm	CGI
ethane	6417	S	000 ppm	CB O
		S	000 ppm	CO
		W	300 ppm	BO
		S	00 ppm	BO
		S	000 ppm	CGI
methane	6716	W	00 ppm	CB O
		S	00 ppm	CB O
		W	00 ppm	BO
		S	00 ppm	BO
		W	00 ppm	CGI
		S	00 ppm	CGI

### Engineering measures

- Adequate ventilation to ensure that occupational exposures are not exceeded
- Use only in well-ventilated areas
- Ensure that eye wash station and safety shower are readily available to the work station location

### Personal protective equipment

#### Respiratory Protection

- Concentration in air determines protection needed
- Use respiratory protection unless adequate local exhaust ventilation is provided or exposure assessment demonstrates that exposures are within recommended exposure guidelines
- Respirator selection must be based on known or anticipated exposure levels, the location of work, and the safe working limits of the selected respirator

#### Filter type

- NIOSH approved air-purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air-purifying respirators is limited. Use a positive pressure, full-facepiece respirator if there is any potential for uncontrolled release of exposure levels are unknown or any other circumstances where air-purifying respirators may not provide adequate protection

#### Hand Protection

#### Material

- Polymeric PPE (e.g., gloves) should be used for break-through times and the specific glove material should be based on your use patterns. It should be readily available. Generally any material regardless of their impermeability will be permeated by chemicals. Therefore protective gloves should be regularly checked for wear and tear.

# SAFETY DATA SHEET

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## GASOLINE, UNLEADED

SDS Number 000003000644

Version 000

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<p>Remarks</p> <p>Eye Protection</p> <p>Skin and body Protection</p> <p>Protective measures Hygiene measures</p>	<p>signs of hardening and cracks they should be changed</p> <p>Chemical resistant gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary</p> <p>Wear face shield and protective suit for abnormal processing problems</p> <p>Choose body protection in relation to its type and the concentration and amount of dangerous substances and to the specific work place</p> <p>Wash contaminated clothing before reuse</p> <p>Remove and wash contaminated clothing and shoes including the inside before reuse</p> <p>Wash face hands and any exposed skin thoroughly after handling</p>
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### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state	Clear liquid
Color	Clear to slightly yellow or green dyed liquid. May be dyed red for identification purposes
Odor	Gasoline
	No data available
Melting point and freezing point	No data available
Boiling point or initial boiling point and boiling range	30-35 °C
Flash point	10-13 °C Method: tagliabue
Flammability	Extremely flammable in presence of open flames and sparks. May accumulate static electrical charge. Sparks are heavier than air and may travel considerable distance to sources of ignition and flash back
Upper explosion limit Flammability limit	7.6 %
Lower explosion limit Flammability limit	0.3 %
Color (hex)	000000 mmHg 00 °C
Relative vapor density	3

# SAFETY DATA SHEET

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## GASOLINE, UNLEADED

SDS Number 000003000644

Version 000      Revision Date 00000000      Print Date 00000003

- Relative density       0.6000
- Density       No data available
- Solubilities
  - Water solubility       insoluble
- Partition coefficient in
  - ocean/water       No data available
  - partition temperature       7 °C
- Decomposition temperature       No data available
- Viscosity
  - viscosity kinematic       No data available
- Particle characteristics
  - Particle size       No classification

### SECTION 10. STABILITY AND REACTIVITY

- Reactivity       No dangerous reaction known under conditions of normal use
- Chemical stability       Stable under normal conditions
- Possibility of hazardous reactions
  - Hazardous polymerization does not occur
- Conditions to avoid
  - extremes of temperature and direct sunlight
- Incompatible materials
  - Reacts with oxidizing agents, acids and inorganic
- Hazardous decomposition products
  - May release CO, NO, ethylene, cyclic aromatic hydrocarbons, aldehydes, ketones, smoke and irritating fumes when heated to decomposition

### SECTION 11. TOXICOLOGICAL INFORMATION

#### Information on likely routes of exposure

- eye contact
- Ingestion
- Inhalation
- Skin contact

#### Acute toxicity

Based on available data the classification criteria are not met

#### Product:

- acute oral toxicity       acute toxicity estimate 0000 mg/kg  
Method: Caecum method
- acute inhalation toxicity       acute toxicity estimate 00 mg/m<sup>3</sup>  
exposure time 4 h  
respiratory rate 20 l/min  
Method: Caecum method

# SAFETY DATA SHEET

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## GASOLINE, UNLEADED

SDS Number 000003000644

Version 000

Revision Date 00000000

Print Date 00000003

Acute dermal toxicity

Acute toxicity estimate 000000 mg/kg  
Method: Caecum method

### Components:

#### Gasoline; Low boiling point naphtha -unspecified:

Acute oral toxicity

LD<sub>50</sub> (Rat) 3600 mg/kg

Acute dermal toxicity

LD<sub>50</sub> (Rabbit) 3700 mg/kg

#### toluene:

Acute oral toxicity

LD<sub>50</sub> (Rat) 000000 mg/kg

Acute inhalation toxicity

LC<sub>50</sub> (Rat) 000000 mg/m<sup>3</sup>  
Exposure time: 4 h  
Respiratory tract

Acute dermal toxicity

LD<sub>50</sub> (Rabbit) 00000000 mg/kg

#### benzene:

Acute oral toxicity

LD<sub>50</sub> (Rat) 00000000 mg/kg

Acute inhalation toxicity

LC<sub>50</sub> (Rat) 3700 ppm  
Exposure time: 4 h  
Respiratory tract

Acute dermal toxicity

LD<sub>50</sub> (Rabbit) 00000040 mg/kg

#### ethanol:

Acute oral toxicity

LD<sub>50</sub> (Rat) 7060 mg/kg

Acute inhalation toxicity

LC<sub>50</sub> (Rat) 3300 ppm  
Exposure time: 4 h  
Respiratory tract

#### methanol:

Acute oral toxicity

LD<sub>50</sub> (Rat) 0000600 mg/kg

Acute dermal toxicity

LD<sub>50</sub> (Rabbit) 00000000 mg/kg

### Skin corrosion/irritation

Causes skin irritation

### Serious eye damage/eye irritation

Based on available data the classification criteria are not met



# SAFETY DATA SHEET

## GASOLINE, UNLEADED

SDS Number 000003000644

Version 000

Revision Date 00000000

Print Date 00000003

### SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

Waste from residues

- The products should not be allowed to enter drains, water courses or the soil.
  - Other solids and non-recyclable solutions to a licensed disposal company.
  - Waste must be classified and labeled prior to recycling or disposal.
  - Send to a licensed waste management company.
  - Dispose of as hazardous waste in compliance with local and national regulations.
  - Dispose of product residue in accordance with the instructions of the person responsible for waste disposal.
- Contaminated packaging
- Contact local or business authorities for guidance on disposal of product.

### SECTION 14. TRANSPORT INFORMATION

#### International Regulations

##### IATA-DGR

- UN ID No.  UN 003
- Proper shipping name  Gasoline
- Class  3
- Packing group  II
- Labels  Flammable liquids
- Packing instruction (Cargo aircraft)  364

##### IMDG-Code

- UN number  UN 003
- Proper shipping name  GASOLINE
- Class  3
- Packing group  II
- Labels  3
- IMS Code  000S
- Marine transport  yes

#### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for products as specified

#### Domestic regulation

##### TDG

- UN number  UN 003
- Proper shipping name  GASOLINE
- Class  3
- Packing group  II
- Labels  3
- TDG Code  000
- Marine transport  yes





# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

## Shell Rotella T4 Triple Protection 15W-40

Version 1.1      Revision Date: 04/30/2018      SDS Number: 800010026636      Print Date: 05/01/2018  
Date of last issue: 05/11/2016

---

### SECTION 1. IDENTIFICATION

Product name : Shell Rotella T4 Triple Protection 15W-40

Product code : 001F8880

#### Manufacturer or supplier's details

Manufacturer/Supplier : **Shell Oil Products US**  
PO Box 4427  
Houston TX 77210-4427  
USA

SDS Request : (+1) 877-276-7285  
Customer Service :

#### Emergency telephone number

Spill Information : 877-504-9351  
Health Information : 877-242-7400

#### Recommended use of the chemical and restrictions on use

Recommended use : Engine oil.

---

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS classification in accordance with 29 CFR 1910.1200

Based on available data this substance / mixture does not meet the classification criteria.

#### GHS label elements

Hazard pictograms : No Hazard Symbol required

Signal word : No signal word

Hazard statements : **PHYSICAL HAZARDS:**  
Not classified as a physical hazard under GHS criteria.  
**HEALTH HAZARDS:**  
Not classified as a health hazard under GHS criteria.  
**ENVIRONMENTAL HAZARDS:**  
Not classified as an environmental hazard under GHS criteria.

Precautionary statements : **Prevention:**  
No precautionary phrases.  
**Response:**  
No precautionary phrases.  
**Storage:**  
No precautionary phrases.  
**Disposal:**

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No precautionary phrases.

### Other hazards which do not result in classification

Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis.

Used oil may contain harmful impurities.

Not classified as flammable but will burn.

The classification of this material is based on OSHA HCS 2012 criteria.

Under normal conditions of use or in a foreseeable emergency, this product does not meet the definition of a hazardous chemical when evaluated according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

### SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical nature : Highly refined mineral oils and additives.  
The highly refined mineral oil contains <3% (w/w) DMSO-extract, according to IP346.

\* contains one or more of the following CAS-numbers: 64742-53-6, 64742-54-7, 64742-55-8, 64742-56-9, 64742-65-0, 68037-01-4, 72623-86-0, 72623-87-1, 8042-47-5, 848301-69-9.

### Hazardous components

Chemical name	Synonyms	CAS-No.	Concentration (% w/w)
Alkaryl amine	bis(nonylphenyl)amine	36878-20-3	1 - 3
Calcium sulphonate	Benzenesulfonic acid, mono-C16-24-alkyl derivs., calcium salts	70024-69-0	0.1 - 0.99
Alkyl borate		Not Assigned	0.1 - 0.99
Dialkyl alkaryl aminomethyl dicarboxylate		Not Assigned	0.1 - 0.99
Alcohol, ethoxylated	Alcohols, C12-16, ethoxylated	68551-12-2	0.1 - 0.5
Interchangeable low viscosity base oil (<20,5 cSt @40°C) *		Not Assigned	0 - 90

### SECTION 4. FIRST-AID MEASURES

If inhaled : No treatment necessary under normal conditions of use.  
If symptoms persist, obtain medical advice.

In case of skin contact : Remove contaminated clothing. Flush exposed area with water and follow by washing with soap if available.  
If persistent irritation occurs, obtain medical attention.

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- In case of eye contact : Flush eye with copious quantities of water. Remove contact lenses, if present and easy to do. Continue rinsing. If persistent irritation occurs, obtain medical attention.
- If swallowed : In general no treatment is necessary unless large quantities are swallowed, however, get medical advice.
- Most important symptoms and effects, both acute and delayed : Oil acne/folliculitis signs and symptoms may include formation of black pustules and spots on the skin of exposed areas. Ingestion may result in nausea, vomiting and/or diarrhoea.
- Protection of first-aiders : When administering first aid, ensure that you are wearing the appropriate personal protective equipment according to the incident, injury and surroundings.
- Indication of any immediate medical attention and special treatment needed : Treat symptomatically.
- 

### SECTION 5. FIRE-FIGHTING MEASURES

- Suitable extinguishing media : Foam, water spray or fog. Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only.
- Unsuitable extinguishing media : Do not use water in a jet.
- Specific hazards during fire-fighting : Hazardous combustion products may include: A complex mixture of airborne solid and liquid particulates and gases (smoke). Carbon monoxide may be evolved if incomplete combustion occurs. Unidentified organic and inorganic compounds.
- Specific extinguishing methods : Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
- Special protective equipment for firefighters : Proper protective equipment including chemical resistant gloves are to be worn; chemical resistant suit is indicated if large contact with spilled product is expected. Self-Contained Breathing Apparatus must be worn when approaching a fire in a confined space. Select fire fighter's clothing approved to relevant Standards (e.g. Europe: EN469).
- 

### SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Avoid contact with skin and eyes.
-

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR 1910.1200

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- Environmental precautions : Use appropriate containment to avoid environmental contamination. Prevent from spreading or entering drains, ditches or rivers by using sand, earth, or other appropriate barriers.
- Local authorities should be advised if significant spillages cannot be contained.
- Methods and materials for containment and cleaning up : Slippery when spilt. Avoid accidents, clean up immediately. Prevent from spreading by making a barrier with sand, earth or other containment material. Reclaim liquid directly or in an absorbent. Soak up residue with an absorbent such as clay, sand or other suitable material and dispose of properly.
- Additional advice : For guidance on selection of personal protective equipment see Chapter 8 of this Safety Data Sheet. For guidance on disposal of spilled material see Chapter 13 of this Safety Data Sheet.
- 

### SECTION 7. HANDLING AND STORAGE

- Technical measures : Use local exhaust ventilation if there is risk of inhalation of vapours, mists or aerosols. Use the information in this data sheet as input to a risk assessment of local circumstances to help determine appropriate controls for safe handling, storage and disposal of this material.
- Advice on safe handling : Avoid prolonged or repeated contact with skin. Avoid inhaling vapour and/or mists. When handling product in drums, safety footwear should be worn and proper handling equipment should be used. Properly dispose of any contaminated rags or cleaning materials in order to prevent fires.
- Avoidance of contact : Strong oxidising agents.
- Product Transfer : This material has the potential to be a static accumulator. Proper grounding and bonding procedures should be used during all bulk transfer operations.
- Further information on storage stability : Keep container tightly closed and in a cool, well-ventilated place. Use properly labeled and closable containers.
- Store at ambient temperature.
- Packaging material : Suitable material: For containers or container linings, use mild steel or high density polyethylene. Unsuitable material: PVC.
-

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Container Advice : Polyethylene containers should not be exposed to high temperatures because of possible risk of distortion.

### SECTION 8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

#### Components with workplace control parameters

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
Oil mist, mineral	Not Assigned	TWA (Mist)	5 mg/m <sup>3</sup>	OSHA Z-1
Oil mist, mineral		TWA (Inhalable fraction)	5 mg/m <sup>3</sup>	ACGIH

#### Biological occupational exposure limits

No biological limit allocated.

#### Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier. Further national methods may be available.

National Institute of Occupational Safety and Health (NIOSH), USA: Manual of Analytical Methods <http://www.cdc.gov/niosh/>

Occupational Safety and Health Administration (OSHA), USA: Sampling and Analytical Methods <http://www.osha.gov/>

Health and Safety Executive (HSE), UK: Methods for the Determination of Hazardous Substances <http://www.hse.gov.uk/>

Institut für Arbeitsschutz Deutschen Gesetzlichen Unfallversicherung (IFA), Germany <http://www.dguv.de/inhalt/index.jsp>

L'Institut National de Recherche et de Sécurité, (INRS), France <http://www.inrs.fr/accueil>

**Engineering measures** : The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Select controls based on a risk assessment of local circumstances. Appropriate measures include:  
Adequate ventilation to control airborne concentrations.

Where material is heated, sprayed or mist formed, there is greater potential for airborne concentrations to be generated.

#### General Information:

Define procedures for safe handling and maintenance of controls.

Educate and train workers in the hazards and control measures relevant to normal activities associated with this product.

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Ensure appropriate selection, testing and maintenance of equipment used to control exposure, e.g. personal protective equipment, local exhaust ventilation.

Drain down system prior to equipment break-in or maintenance.

Retain drain downs in sealed storage pending disposal or subsequent recycle.

Always observe good personal hygiene measures, such as washing hands after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned.

Practice good housekeeping.

### Personal protective equipment

Respiratory protection : No respiratory protection is ordinarily required under normal conditions of use.  
In accordance with good industrial hygiene practices, precautions should be taken to avoid breathing of material.  
If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, select respiratory protection equipment suitable for the specific conditions of use and meeting relevant legislation.  
Check with respiratory protective equipment suppliers.  
Where air-filtering respirators are suitable, select an appropriate combination of mask and filter.  
Select a filter suitable for the combination of organic gases and vapours [Type A/Type P boiling point >65°C (149°F)].

Hand protection  
Remarks : Where hand contact with the product may occur the use of gloves approved to relevant standards (e.g. Europe: EN374, US: F739) made from the following materials may provide suitable chemical protection. PVC, neoprene or nitrile rubber gloves Suitability and durability of a glove is dependent on usage, e.g. frequency and duration of contact, chemical resistance of glove material, dexterity. Always seek advice from glove suppliers. Contaminated gloves should be replaced.  
Personal hygiene is a key element of effective hand care.  
Gloves must only be worn on clean hands. After using gloves, hands should be washed and dried thoroughly. Application of a non-perfumed moisturizer is recommended.  
For continuous contact we recommend gloves with breakthrough time of more than 240 minutes with preference for > 480 minutes where suitable gloves can be identified. For short-term/splash protection we recommend the same, but recognize that suitable gloves offering this level of protection may not be available and in this case a lower breakthrough time maybe acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as it is dependent on the exact composition of the glove material.

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- Glove thickness should be typically greater than 0.35 mm depending on the glove make and model.
- Eye protection : If material is handled such that it could be splashed into eyes, protective eyewear is recommended.
- Skin and body protection : Skin protection is not ordinarily required beyond standard work clothes.  
It is good practice to wear chemical resistant gloves.
- Protective measures : Personal protective equipment (PPE) should meet recommended national standards. Check with PPE suppliers.
- Thermal hazards : Not applicable

### Environmental exposure controls

- General advice : Take appropriate measures to fulfill the requirements of relevant environmental protection legislation. Avoid contamination of the environment by following advice given in Chapter 6. If necessary, prevent undissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water.  
Local guidelines on emission limits for volatile substances must be observed for the discharge of exhaust air containing vapour.

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### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance : liquid
- Colour : Clear amber
- Odour : Slight hydrocarbon
- Odour Threshold : Data not available
- pH : Not applicable
- pour point : -36 °C / -33 °F  
Method: ASTM D97
- Initial boiling point and boiling range : > 280 °C / 536 °F  
estimated value(s)
- Flash point : 234 °C / 453 °F  
Method: ASTM D92 (COC)
- Evaporation rate : Data not available
- Flammability (solid, gas) : Data not available

# SAFETY DATA SHEET

According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200

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Upper explosion limit / upper flammability limit : Typical 10 %(V)

Lower explosion limit / Lower flammability limit : Typical 1 %(V)

Vapour pressure : < 0.5 Pa (20 °C / 68 °F)  
estimated value(s)

Relative vapour density : > 1  
estimated value(s)

Relative density : 0.878 (15 °C / 59 °F)

Density : 878 kg/m<sup>3</sup> (15.0 °C / 59.0 °F)  
Method: ASTM D4052

Solubility(ies)  
Water solubility : negligible

Solubility in other solvents : Data not available

Partition coefficient: n-octanol/water : log Pow: > 6  
(based on information on similar products)

Auto-ignition temperature : > 320 °C / 608 °F

Decomposition temperature : Data not available

Viscosity  
Viscosity, dynamic : Data not available

Viscosity, kinematic : 14.9 mm<sup>2</sup>/s (100 °C / 212 °F)  
Method: ASTM D445

Explosive properties : Not classified

Oxidizing properties : Data not available

Conductivity : This material is not expected to be a static accumulator.

---

### SECTION 10. STABILITY AND REACTIVITY

Reactivity : The product does not pose any further reactivity hazards in addition to those listed in the following sub-paragraph.

Chemical stability : Stable.

Possibility of hazardous reac- : Reacts with strong oxidising agents.

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tions

Conditions to avoid : Extremes of temperature and direct sunlight.

Incompatible materials : Strong oxidising agents.

Hazardous decomposition products : No decomposition if stored and applied as directed.

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### SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment : Information given is based on data on the components and the toxicology of similar products. Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).

#### Information on likely routes of exposure

Skin and eye contact are the primary routes of exposure although exposure may occur following accidental ingestion.

#### Acute toxicity

##### Product:

Acute oral toxicity : LD50 (rat): > 5,000 mg/kg  
Remarks: Low toxicity:  
Based on available data, the classification criteria are not met.

Acute inhalation toxicity : Remarks: Based on available data, the classification criteria are not met.

Acute dermal toxicity : LD50 (Rabbit): > 5,000 mg/kg  
Remarks: Low toxicity:  
Based on available data, the classification criteria are not met.

#### Skin corrosion/irritation

##### Product:

Remarks: Slightly irritating to skin., Prolonged or repeated skin contact without proper cleaning can clog the pores of the skin resulting in disorders such as oil acne/folliculitis., Based on available data, the classification criteria are not met.

#### Serious eye damage/eye irritation

##### Product:

Remarks: Slightly irritating to the eye., Based on available data, the classification criteria are not met.

#### Respiratory or skin sensitisation

##### Product:

Remarks: Not a skin sensitiser.  
Based on available data, the classification criteria are not met.

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### **Components:**

#### **Calcium sulphonate:**

Remarks: May cause an allergic skin reaction in sensitive individuals.

Remarks: Classified Skin Sensitiser Category 1B.

#### **Alkyl borate:**

Remarks: May cause an allergic skin reaction in sensitive individuals.

Remarks: Classified Skin Sensitiser Category 1B.

#### **Dialkyl alkaryl aminomethyl dicarboxylate:**

Remarks: May cause an allergic skin reaction in sensitive individuals.

Remarks: Classified Skin Sensitiser Category 1B.

### **Germ cell mutagenicity**

#### **Product:**

: Remarks: Non mutagenic, Based on available data, the classification criteria are not met.

### **Carcinogenicity**

#### **Product:**

Remarks: Not a carcinogen., Based on available data, the classification criteria are not met.

Remarks: Product contains mineral oils of types shown to be non-carcinogenic in animal skin-painting studies., Highly refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

#### **IARC**

No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

#### **OSHA**

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

#### **NTP**

No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

### **Reproductive toxicity**

#### **Product:**

: Remarks: Not a developmental toxicant., Does not impair fertility., Based on available data, the classification criteria are

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not met.

### STOT - single exposure

**Product:**

Remarks: Based on available data, the classification criteria are not met.

### STOT - repeated exposure

**Product:**

Remarks: Based on available data, the classification criteria are not met.

### Aspiration toxicity

**Product:**

Not an aspiration hazard.

### Further information

**Product:**

Remarks: Used oils may contain harmful impurities that have accumulated during use. The concentration of such impurities will depend on use and they may present risks to health and the environment on disposal., ALL used oil should be handled with caution and skin contact avoided as far as possible.

Remarks: Continuous contact with used engine oils has caused skin cancer in animal tests.

Remarks: Slightly irritating to respiratory system.

---

## SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment : Ecotoxicological data have not been determined specifically for this product.  
Information given is based on a knowledge of the components and the ecotoxicology of similar products.  
Unless indicated otherwise, the data presented is representative of the product as a whole, rather than for individual component(s).(LL/EL/IL50 expressed as the nominal amount of product required to prepare aqueous test extract).

### Ecotoxicity

**Product:**

Toxicity to fish (Acute toxicity) :  
Remarks: LL/EL/IL50 > 100 mg/l  
Practically non toxic:  
Based on available data, the classification criteria are not met.

Toxicity to daphnia and other aquatic invertebrates (Acute) :  
Remarks: LL/EL/IL50 > 100 mg/l

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toxicity)      Practically non toxic:  
Based on available data, the classification criteria are not met.

Toxicity to algae (Acute toxicity) :      Remarks: LL/EL/IL50 > 100 mg/l  
Practically non toxic:  
Based on available data, the classification criteria are not met.

Toxicity to fish (Chronic toxicity) :      Remarks: Data not available

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) :      Remarks: Data not available

Toxicity to microorganisms (Acute toxicity) :      Remarks: Data not available

### Persistence and degradability

#### Product:

Biodegradability :      Remarks: Not readily biodegradable.  
Major constituents are inherently biodegradable, but contains components that may persist in the environment.

### Bioaccumulative potential

#### Product:

Bioaccumulation :      Remarks: Contains components with the potential to bioaccumulate.

### Mobility in soil

#### Product:

Mobility :      Remarks: Liquid under most environmental conditions.  
If it enters soil, it will adsorb to soil particles and will not be mobile.

Remarks: Floats on water.

### Other adverse effects

#### Product:

Additional ecological information :      Does not have ozone depletion potential, photochemical ozone creation potential or global warming potential.  
Product is a mixture of non-volatile components, which will not be released to air in any significant quantities under normal conditions of use.

Poorly soluble mixture.  
Causes physical fouling of aquatic organisms.

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Mineral oil does not cause chronic toxicity to aquatic organisms at concentrations less than 1 mg/l.

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### SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

Waste from residues : Recover or recycle if possible.  
It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations.  
Do not dispose into the environment, in drains or in water courses

Waste product should not be allowed to contaminate soil or ground water, or be disposed of into the environment.  
Waste, spills or used product is dangerous waste.

Contaminated packaging : Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand. Disposal should be in accordance with applicable regional, national, and local laws and regulations.

#### Local legislation

Remarks : Disposal should be in accordance with applicable regional, national, and local laws and regulations.

---

### SECTION 14. TRANSPORT INFORMATION

#### National Regulations

##### US Department of Transportation Classification (49 CFR Parts 171-180)

Not regulated as a dangerous good

#### International Regulations

##### IATA-DGR

Not regulated as a dangerous good

##### IMDG-Code

Not regulated as a dangerous good

#### Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable for product as supplied. MARPOL Annex 1 rules apply for bulk shipments by sea.

#### Special precautions for user

Remarks : Special Precautions: Refer to Chapter 7, Handling & Storage, for special precautions which a user needs to be aware of or

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Distillates (petroleum), hydrotreated light paraffinic	64742-55-8
lubricating oils (petroleum), C15-30, hydrotreated neutral oil-based	72623-86-0
Distillates (petroleum), hydrotreated heavy paraffinic	64742-54-7

**The components of this product are reported in the following inventories:**

EINECS : All components listed or polymer exempt.  
TSCA : All components listed.  
DSL : All components listed.

---

### SECTION 16. OTHER INFORMATION

#### Further information

NFPA Rating (Health, Fire, Reactivity) 0, 1, 0

#### Full text of other abbreviations

ACGIH : USA. ACGIH Threshold Limit Values (TLV)  
OSHA Z-1 : USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants  
ACGIH / TWA : 8-hour, time-weighted average  
OSHA Z-1 / TWA : 8-hour time weighted average  
Abbreviations and Acronyms : The standard abbreviations and acronyms used in this document can be looked up in reference literature (e.g. scientific dictionaries) and/or websites.

ACGIH = American Conference of Governmental Industrial Hygienists  
ADR = European Agreement concerning the International Carriage of Dangerous Goods by Road  
AICS = Australian Inventory of Chemical Substances  
ASTM = American Society for Testing and Materials  
BEL = Biological exposure limits  
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes  
CAS = Chemical Abstracts Service  
CEFIC = European Chemical Industry Council  
CLP = Classification Packaging and Labelling  
COC = Cleveland Open-Cup  
DIN = Deutsches Institut für Normung  
DMEL = Derived Minimal Effect Level  
DNEL = Derived No Effect Level  
DSL = Canada Domestic Substance List  
EC = European Commission  
EC50 = Effective Concentration fifty  
ECETOC = European Center on Ecotoxicology and Toxicology Of Chemicals  
ECHA = European Chemicals Agency  
EINECS = The European Inventory of Existing Commercial Chemical Substances

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According to OSHA Hazard Communication Standard, 29 CFR  
1910.1200

## Shell Rotella T4 Triple Protection 15W-40

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EL50 = Effective Loading fifty  
ENCS = Japanese Existing and New Chemical Substances Inventory  
EWC = European Waste Code  
GHS = Globally Harmonised System of Classification and Labelling of Chemicals  
IARC = International Agency for Research on Cancer  
IATA = International Air Transport Association  
IC50 = Inhibitory Concentration fifty  
IL50 = Inhibitory Level fifty  
IMDG = International Maritime Dangerous Goods  
INV = Chinese Chemicals Inventory  
IP346 = Institute of Petroleum test method N° 346 for the determination of polycyclic aromatics DMSO-extractables  
KECI = Korea Existing Chemicals Inventory  
LC50 = Lethal Concentration fifty  
LD50 = Lethal Dose fifty per cent.  
LL/EL/IL = Lethal Loading/Effective Loading/Inhibitory loading  
LL50 = Lethal Loading fifty  
MARPOL = International Convention for the Prevention of Pollution From Ships  
NOEC/NOEL = No Observed Effect Concentration / No Observed Effect Level  
OE\_HP V = Occupational Exposure - High Production Volume  
PBT = Persistent, Bioaccumulative and Toxic  
PICCS = Philippine Inventory of Chemicals and Chemical Substances  
PNEC = Predicted No Effect Concentration  
REACH = Registration Evaluation And Authorisation Of Chemicals  
RID = Regulations Relating to International Carriage of Dangerous Goods by Rail  
SKIN\_DES = Skin Designation  
STEL = Short term exposure limit  
TRA = Targeted Risk Assessment  
TSCA = US Toxic Substances Control Act  
TWA = Time-Weighted Average  
vPvB = very Persistent and very Bioaccumulative

A vertical bar (|) in the left margin indicates an amendment from the previous version.

Sources of key data used to compile the Safety Data Sheet : The quoted data are from, but not limited to, one or more sources of information (e.g. toxicological data from Shell Health Services, material suppliers' data, CONCAWE, EU IUCLID data base, EC 1272 regulation, etc).

Revision Date : 04/30/2018

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not

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According to OSHA Hazard Communication Standard, 29 CFR  
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to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

US / EN





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### Precautionary statements

- Prevention:**  
No precautionary phrases
- Response:**  
No precautionary phrases
- Storage:**  
No precautionary phrases
- Disposal:**  
No precautionary phrases

### Other hazards which do not result in classification

Prolonged or repeated skin contact with product for cleaning can clog the pores of the skin resulting in disorders such as acne. Oil based grease may contain harmful impurities. High pressure in action under the skin may cause serious damage including laceration and necrosis. Not classified as flammable because of its high flash point.

## SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance Name                      Mi

### 3 Mi

- Chemical Name                      Mi
- 3 Mi
- Chemical Name                      Mi
- 3 Mi
- Chemical Name                      Mi
- 3 Mi

### Components

Chemical Name	COS No	Classification	Concentration % w/w
Bismuth Naphthenate	736000	Skin Sens 3.7 Eye Irrit 3.0 Acute Chronic 4	0.00
Sulfonic acid	3304	Skin Irrit 3.0 Skin Sens 3.7 Eye Irrit 3.0	0.00
Zinc Naphthenate	00003	Skin Sens 3.7 Eye Irrit 3.0	0.04

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		<input type="checkbox"/> GHS 07:03 <input type="checkbox"/> 4	
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For explanation of abbreviations see section 6

### SECTION 4. FIRST-AID MEASURES

- |   |   |
|---|---|
| <p>Inhaled</p>  | <ul style="list-style-type: none"> <li><input type="checkbox"/> No treatment necessary under normal conditions of use</li> <li><input type="checkbox"/> If symptoms persist obtain medical advice</li> </ul>  |
| <p>In case of skin contact</p>                                    | <ul style="list-style-type: none"> <li><input type="checkbox"/> Remove contaminated clothing and decontaminate exposed area with water and flow by washing with soap immediately</li> <li><input type="checkbox"/> If persistent irritation occurs obtain medical attention</li> <li><input type="checkbox"/> When using high pressure equipment in injection of rodenticide under the skin can occur high pressure injuries occur in case of sudden be sent immediately to a hospital. Do not wait for symptoms to develop</li> <li><input type="checkbox"/> Obtain medical attention even in the absence of awareness wounds</li> </ul>   |
| <p>In case of eye contact</p>                                     | <ul style="list-style-type: none"> <li><input type="checkbox"/> Flush eye with copious quantities of water</li> <li><input type="checkbox"/> Remove contact lenses if present and easy to do. Continue rinsing</li> <li><input type="checkbox"/> If persistent irritation occurs obtain medical attention</li> </ul>  |
| <p>If swallowed</p>   | <ul style="list-style-type: none"> <li><input type="checkbox"/> In general no treatment is necessary unless large quantities are swallowed. Offer general medical advice</li> </ul>   |
| <p>Most important symptoms and effects both acute and delayed</p> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Oily or greasy signs and symptoms may include formation of black crusts and spots on the skin of exposed areas</li> <li><input type="checkbox"/> Ingestion may result in nausea, vomiting and/or diarrhoea</li> <li><input type="checkbox"/> Local necrosis is evidenced by delayed onset of pain and tissue damage a few hours following injection</li> </ul>  |
| <p>Protection of first aiders</p>                                 | <ul style="list-style-type: none"> <li><input type="checkbox"/> When administering first aid ensure that you are wearing the appropriate personal protective equipment according to the incident history and surroundings</li> </ul>  |
| <p>Notes to physician</p>   | <ul style="list-style-type: none"> <li><input type="checkbox"/> Area symptomatic</li> <li><input type="checkbox"/> High pressure injection injuries require prompt surgical intervention and possibly steroid therapy to minimise tissue damage and loss of function</li> <li><input type="checkbox"/> Because entry wounds are small and do not require seriousness of the underlying damage, surgical exploration to determine the extent of involvement may be necessary. Local anaesthetics or hot soaks should be avoided because they can contribute to sweating, gas gangrene and ischaemia. Prompt surgical decompression, debridement and excision of foreign materials should be performed under general anaesthetics and wide excision is essential</li> </ul> |

### SECTION 5. FIRE-FIGHTING MEASURES

- |                                     |  |
|-------------------------------------|--|
| <p>Stable extinguishing media</p>   | <ul style="list-style-type: none"> <li><input type="checkbox"/> Foam, water spray or fog, Dry chemical powder, carbon dioxide, sand or earth may be used for small fires only</li> </ul> |
| <p>Unstable extinguishing media</p> | <ul style="list-style-type: none"> <li><input type="checkbox"/> Do not use water in a jet</li> </ul>   |

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Specific hazards during fire fighting

- Cardos combustion products may include:
  - combustion products of airborne solid and liquid particles and gases (smoke)
  - Carbon monoxide may be emitted in incomplete combustion
  - Identified organic and inorganic compounds

Specific extinguishing methods

- Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Special protective equipment for firefighters

- Proper protective equipment including chemical resistance gloves are to be worn. Chemical resistance is indicated in large contact with solid products. See Contained Breathing Apparatus must be worn when approaching a fire in a confined space. See fire fighters clothing approved to relevant standards (e.g. EN 46)

Classification Code

- NON

### SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal protective equipment and emergency procedures in environment

- Avoid contact with skin and eyes
- Use appropriate containment to prevent uncontrolled release. Prevent from spreading or entering drains/ditches or rivers by using sand/ear or other appropriate barriers

Methods and materials for containment and cleaning

- Prevent from spreading or entering into drains/ditches or rivers by using sand/ear or other appropriate barriers

Additional advice

- For guidance on selection of personal protective equipment see Section 8 of this Safety Data Sheet
- For guidance on disposal of spilled material see Section 13 of this Safety Data Sheet

### SECTION 7. HANDLING AND STORAGE

General Precautions

- Use adequate ventilation if there is risk of inhalation of vapors/mists or aerosols
- Use the information in this data sheet as input to a risk assessment to local circumstances to determine appropriate controls for safe handling, storage and disposal of this material

Advice on safe handling

- Avoid prolonged or repeated contact with skin
- Avoid inhaled vapors and/or mists
- When handling product in drums safety footwear should be worn and proper handling equipment should be used
- Properly dispose of any contaminated rags or cleaning materials in order to prevent fires

Avoidance of contact

- Strong oxidizing agents

Storage

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Other data	<ul style="list-style-type: none"> <li>Keep container tightly closed and in a cool, well-ventilated place.</li> <li>Use properly labeled and closed containers.</li> <li>Store ambient temperature.</li> </ul>
Packaging material	<ul style="list-style-type: none"> <li>Stable material or containers or container linings use mild steel or high density polyethylene.</li> <li>Incompatible material: PVC.</li> </ul>
Container advice	<ul style="list-style-type: none"> <li>Polyethylene containers should not be exposed to light temperatures because of possible risk of discoloration.</li> </ul>

### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

#### Components with workplace control parameters

Components	COS No	hazard type form of exposure	Control parameters Permissible concentration	Basis
Oil mist/minera	No assigned	W Mis	mg/m3	O
Oil mist/minera	No assigned	W Mis	mg/m3	Criteria Workplace Exposure Standards for Airborne Contaminants
Oil mist/minera	No assigned	W Mis	mg/m3	OS
Oil mist/minera	No assigned	W Incompatible Material	mg/m3	CGI

#### Biological occupational exposure limits

No biological limit indicated

#### Monitoring Methods

Monitoring of the concentration of substances in the breathing zone of workers or in the general workplace may be required to confirm compliance with an OEL and adequacy of exposure controls. For some substances biological monitoring may also be appropriate.

Validated exposure measurement methods should be applied by a competent person and samples analysed by an accredited laboratory.

Examples of sources of recommended exposure measurement methods are given below or contact the supplier for other national methods may be available.

National Institute of Occupational Safety and Health (NIOSH) Sampling and Analytical Methods  
[www.cdc.gov/niosh](http://www.cdc.gov/niosh)

Occupational Safety and Health Administration (OSHA) Sampling and Analytical Methods  
[www.osa.gov](http://www.osa.gov)

Health and Safety Executive (HSE) Methods for the Determination of Hazardous Substances  
[www.hse.gov.uk](http://www.hse.gov.uk)

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Insitu GmbH Arbeitsschutz / Beschäftigten in der Fertigung in Deutschland  
[www.dg.de/inhalt/index](http://www.dg.de/inhalt/index)  
Insitu Nationale Recherche und Sicherheitsinstitute (NRS) / [www.inrs.fr/accueil](http://www.inrs.fr/accueil)

### Engineering measures

- Die Reihenfolge der Maßnahmen und Typen von Kontrollen notwendig sind abhängig von den potentiellen Gefahrenbedingungen. Selektive Kontrollen basieren auf einer Risikoprüfung der Umstände.
- Kontrollmaßnahmen umfassen:
  - die Vermeidung von Kontaminationsrisiken.
  - Wenn Materialien geteilt, abgefüllt oder mischbar sind, besteht ein erhöhtes Risiko für airborne Kontaminationen.
- Generell Information:
  - Definieren Sie Verfahren für den sicheren Umgang und die Wartung von Kontrollen.
  - Schulden Sie die Arbeiter in den Gefahren und Kontrollmaßnahmen nach den Normen und Vorschriften, die mit dem Produkt verbunden sind.
  - Sichern Sie die geeignete Auswahl, den Einsatz und die Wartung von Einrichtungen, die zur Kontrolle von Gefahrstoffen eingesetzt werden.
  - Drainieren Sie das System vor dem Öffnen, dem Brechen oder der Wartung.
  - Reinigen Sie die Drainagen in geschlossenen Behältern, bevor sie entsorgt oder recycelt werden.
  - Beachten Sie die gute persönliche Hygiene, wie das Waschen der Hände vor dem Umgang mit dem Material und vor dem Essen, Trinken oder Rauchen. Reinigen Sie Ihre Arbeitskleidung und Ihre persönliche Schutzausrüstung, bevor Sie diese entsorgen. Entsorgen Sie kontaminierte Kleidung und Schuhe nicht in der Mülltonne. Entsorgen Sie kontaminierte Kleidung und Schuhe nicht in der Mülltonne.
  - Beachten Sie die gute Arbeitshygiene.
  - Die von dem Produkt stammende feste Konsistenz, die bei der Generierung von Staub und Dämpfen entsteht, ist nicht zu erwarten.

### Personal protective equipment

#### Protective measures

Personalschutzkleidung (PPK) sollte den empfohlenen nationalen Standards entsprechen. Prüfen Sie die PPK-Anforderungen.

#### Respiratory protection

- Keine Atemschutzmaßnahmen sind normalerweise erforderlich.
- In Übereinstimmung mit den guten industriellen Hygienepraktiken sollten Vorsichtsmaßnahmen ergriffen werden, um das Einatmen von Material zu vermeiden.
- Wenn die technischen Kontrollen nicht ausreichen, um die airborne Konzentrationen von Gefahrstoffen auf einem Niveau zu halten, das für die Gesundheit der Arbeiter nicht gefährlich ist, sind Atemschutzmaßnahmen erforderlich.
- Selektive Atemschutzmaßnahmen sind erforderlich, wenn spezifische Bedingungen vorliegen und die entsprechenden Vorschriften beachtet werden.
- Wenn die Atemschutzmaßnahmen nicht ausreichen, sind eine geeignete Kombination aus Maske und Filter zu wählen.
- Selektive Filter sind erforderlich für die Kombination von organischen Gasen und Aerosolen und Partikeln. Typische Beispiele sind P 3, P 4, P 6, P 65, P 66, P 67, P 68, P 69, P 70, P 71, P 72, P 73, P 74, P 75, P 76, P 77, P 78, P 79, P 80, P 81, P 82, P 83, P 84, P 85, P 86, P 87, P 88, P 89, P 90, P 91, P 92, P 93, P 94, P 95, P 96, P 97, P 98, P 99, P 100.

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Hand Protection  
Remarks

Where hand contact with the product may occur the use of gloves approved to relevant standards (eg EN374 or S373) made from the following materials may provide suitable chemical protection: PC, neoprene or nitrile rubber gloves. Suitability and durability of a glove is dependent on usage, frequency and duration of contact. Chemical resistance of glove material differently ways seek advice from glove suppliers. Contaminated gloves should be replaced. Personal hygiene is a key element of effective hand care. Gloves must only be worn on clean hands. After using gloves hands should be washed and dried thoroughly. Application of a non-perfumed moisturiser is recommended.

For continuous contact we recommend gloves with break through time of more than 40 minutes with reference to 400 minutes where suitable gloves can be identified for short term tasks. For protection we recommend the same basic recognition of suitable gloves offering this level of protection may not be available and in this case a lower break through time may be acceptable so long as appropriate maintenance and replacement regimes are followed. Glove thickness is not a good predictor of glove resistance to a chemical as this depends on the exact composition of the glove material. Glove thickness should be typically greater than 0.3 mm depending on the glove make and model.

Eye Protection

If materials and dust could be splashed into eyes eye protection is recommended.

Skin and body Protection

Skin protection is not ordinarily required beyond standard work clothes. It is good practice to wear chemical resistant gloves.

Respiratory Protection

Not applicable.

### Environmental exposure controls

General advice

Take appropriate measures to minimize the requirements of relevant environmental protection legislation to avoid contamination of the environment by following advice given in Section 6. If necessary prevent dissolved material from being discharged to waste water. Waste water should be treated in a municipal or industrial waste water treatment plant before discharge to surface water. Local guidelines on emission limits for toxic substances must be observed for the discharge of effluents containing caustic.

## SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Semi-solid ambient temperature.

Colour

brown

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Odor	Significant hydrocarbon
Odor threshold	Data not available
	Not applicable
Drooping point	30 °C (86 °F) Method IP 336
Meeting freezing point	Data not available
Initial boiling point and boiling range	Data not available
Flash point	Not applicable
Corrosion rate	Data not available
Flammability (solid/gas)	Not applicable
Flammability (liquids)	Not classified as flammable below 100 °F
Boiler explosion limit	Cyclic 0 %
Lower explosion limit	Cyclic 0 %
Vapor pressure	0 Pa (0 °C) 6 mm Hg estimated values
Relative vapor density	Estimated values
Relative density	1.000 (20 °C)
Density	1.000 kg/m <sup>3</sup> (20 °C) 1.000 Method not specified
Solubilities	
Water solubility	negligible
Solubility in other solvents	Data not available
Partition coefficient n-octanol/water	log Pow 6 based on information on similar products
Autoignition temperature	300 °C (600 °F)
Decomposition temperature	Data not available
Viscosity	
Viscosity (dynamic)	Data not available
Viscosity (kinematic)	Not applicable

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Particulate characteristics	
Particulate size	Data not available
Compositional properties	Classification Code Not classified
Odouring properties	Data not available
Conductivity	This material is not expected to be a static accumulator

### SECTION 10. STABILITY AND REACTIVITY

Reactivity	The product does not pose any further reactivity hazards in addition to those listed in the following subparagraphs
Chemical stability	Stable
Possibility of hazardous reactions	Reacts with strong oxidising agents
Conditions to avoid	Extremes of temperature and direct sunlight
Incompatible materials	Strong oxidising agents
Hazardous decomposition products	No decomposition is foreseen and assumed as directed

### SECTION 11. TOXICOLOGICAL INFORMATION

Basis for assessment	Information given is based on data on the components and the toxicology of similar products unless indicated otherwise. The data presented is representative of the product as a whole rather than for individual components.
Routes of exposure	Skin and eye contact are the primary routes of exposure. Inhalation exposure may occur following accidental ingestion.

#### Acute toxicity

<b>Product:</b>	
Oral toxicity	LD <sub>50</sub> 2000 mg/kg Remarks: Low toxicity Based on available data the classification criteria are not met.
Inhalation toxicity	Remarks: Based on available data the classification criteria are not met.
Dermal toxicity	LD <sub>50</sub> Rabbit 2000 mg/kg Remarks: Low toxicity Based on available data the classification criteria are not met.

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### Skin corrosion/irritation

**Product:**

Remarks: Slightly irritating to skin. Prolonged or repeated skin contact with or after cleaning can clog the pores of the skin resulting in disorders such as acne or eczema. Based on available data the classification criteria are not met.

### Serious eye damage/eye irritation

**Product:**

Remarks: Slightly irritating to the eye. Based on available data the classification criteria are not met.

### Respiratory or skin sensitisation

**Product:**

Remarks: Not a skin sensitizer.  
Based on available data the classification criteria are not met.

**Components:**

**Naphthenic acid:**

Remarks: May cause an allergic skin reaction in sensitive individuals.

### Chronic toxicity

### Germ cell mutagenicity

**Product:**

Remarks: Non mutagenic. Based on available data the classification criteria are not met.

### Carcinogenicity

**Product:**

Remarks: Not a carcinogen. Based on available data the classification criteria are not met.

Remarks: Product contains mineral oils which are shown to be non-carcinogenic in animal skin. Certain specially refined mineral oils are not classified as carcinogenic by the International Agency for Research on Cancer (IARC).

Material	GHS/CLP Carcinogenicity Classification
Bismuth酸钠	No carcinogenicity classification
Na苯酸	No carcinogenicity classification
锌酸钠	No carcinogenicity classification

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### Reproductive toxicity

#### Product:

Remarks No adverse effects can be seen. Does not impair fertility. Based on available data the classification criteria are not met.

### STOT - single exposure

#### Product:

Remarks Based on available data the classification criteria are not met.

### STOT - repeated exposure

#### Product:

Remarks Based on available data the classification criteria are not met.

### Aspiration toxicity

#### Product:

No aspiration hazard.

### Further information

#### Product:

Remarks Used grease may contain harmful impurities that can be accumulated during use. The concentration of such harmful impurities will depend on use and they may present risks to health and the environment. Used grease should be handled with caution and skin contact avoided as far as possible.

Remarks Significant pressure infection of the skin may lead to local necrosis if the product is not surgically removed.

Remarks Slightly irritating to respiratory system.

## SECTION 12. ECOLOGICAL INFORMATION

Basis for assessment

Ecotoxicological data have not been determined specifically for this product.

Information given is based on a knowledge of the components and the ecology of similar products.

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Unless indicated otherwise the data presented is representative of the product as a whole rather than for individual components

### Ecotoxicity

#### Product:

Toxicity to fish acute toxicity

Remarks Based on available data the classification criteria are not met  
Practically non toxic  
00000000 0000 mg

Toxicity to crustacean acute toxicity

Remarks Based on available data the classification criteria are not met  
Practically non toxic  
00000000 0000 mg

Toxicity to algae/aquatic plants acute toxicity

Remarks Based on available data the classification criteria are not met  
Practically non toxic  
00000000 0000 mg

Toxicity to fish Chronic toxicity

Remarks Based on available data the classification criteria are not met

Toxicity to crustacean Chronic toxicity

Remarks Based on available data the classification criteria are not met

Toxicity to microorganisms acute toxicity

Remarks Based on available data the classification criteria are not met

### Persistence and degradability

#### Product:

Biodegradability

Remarks No readily biodegradable. Major constituents are inherently biodegradable but contains components that may persist in the environment. Persistence per IMO criteria. International Oil Pollution Compensation (IOPC) and definition: "A non-persistent oil is oil which a) the time of settlement consists of hydrocarbon fractions that are less than 0.1% of the oil by volume and b) the time of settlement is less than 340 days at 37°C and 700 days when tested by the ASTM Method D 67 or any subsequent revision thereof"

### Bioaccumulative potential

#### Product:

Bioaccumulation

Remarks Contains components with low bioaccumulation

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300000

bioaccumulative

Partition coefficient in  
oceanic water

Log Pow 6 Remarks based on information on similar  
rodenticides

### Mobility in soil

#### Product:

Mobility

Remarks Semi-solid under most environmental conditions  
binds to soil particles and will not be  
mobile  
Remarks based on water

### Other adverse effects

No data available

#### Product:

Additional ecological  
information

Does not cause ozone depletion or global warming or global  
climate change or global warming or global climate change  
is a mixture of non-hazardous components which will not be  
released to air in any significant quantities under normal  
conditions of use  
Poorly soluble in water Causes physical irritation to aquatic  
organisms  
Mineral oil does not cause chronic toxicity to aquatic  
organisms at concentrations less than 1 mg/l

## SECTION 13. DISPOSAL CONSIDERATIONS

### Disposal methods

Waste from residues

Recover or recycle if possible  
It is the responsibility of the waste generator to determine the  
toxicity and physical properties of the material generated to  
determine the proper waste classification and disposal  
methods in compliance with applicable regulations  
Waste rods should not be allowed to contaminate soil or  
ground water or be disposed of in the environment  
Do not dispose in the environment in drains or in water  
courses  
Do not dispose of tank water bottoms by allowing them to  
drain into the ground pits with residues in soil and groundwater  
contamination  
Waste arising from a spillage or tank cleaning should be  
disposed of in accordance with prevailing regulations  
preferably to a recognised collector or contractor  
competence of the collector or contractor should be  
established before and

Contaminated packaging

MARPOL see International Convention for the Prevention of  
Pollution from Ships (MARPOL 73/78) which provides  
technical details and controlling conditions from ships  
Dispose in accordance with prevailing regulations preferably  
to a recognised collector or contractor of the competence of

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The collector or contractor should be established before and disposal should be in accordance with applicable regional national and local laws and regulations

Local legislation  
Remarks

Disposal should be in accordance with applicable regional national and local laws and regulations

### SECTION 14. TRANSPORT INFORMATION

#### National Regulations

##### ADG

Not regulated as a dangerous good

#### International Regulations

##### IATA-DGR

Not regulated as a dangerous good

##### IMDG-Code

Not regulated as a dangerous good

#### Maritime transport in bulk according to IMO instruments

MRPO annexes apply for bulk shipments by sea

#### Special precautions for user

Remarks

Special Precautions Refer to Section 7 and the Storage or special precautions which a user needs to be aware of or needs to comply with in connection with transport

### SECTION 15. REGULATORY INFORMATION

#### Safety, health and environmental regulations/legislation specific for the substance or mixture

Ceramic Goods (Poisons) - No poison schedule number allocated  
Standard Instrument

The regulatory information is not intended to be comprehensive. Other regulations may apply to this material

Product classified as per Work Area Safety Regulations – Implementation of the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) and SDS prepared as per national code of practice for preparation of safety data sheets for hazardous chemicals 2009 based on Globally Harmonized Classification Version 7

National Code of Practice for the Labeling of Workplace Hazardous Chemicals 2009

Italian Code for the Transport of Dangerous Goods by Road and Rail (DG code) Standard for the Uniform Scheduling of Medicines and Poisons (SMP)

#### Other international regulations

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The components of this product are reported in the following inventories:

- SC
- IIC
- Components listed
- Listed in Introduction

### SECTION 16. OTHER INFORMATION

#### Full text of H-Statements

- H302 Causes skin irritation
- H317 May cause an allergic skin reaction
- H332 Causes serious eye irritation
- H411 Harmful to aquatic life with long lasting effects

#### Full text of other abbreviations

- Aquatic Chronic
- Long term aquatic hazard
- Eye Irrit
- Eye irritation
- Skin Irrit
- Skin irritation
- Skin Sens
- Skin sensitisation

#### Abbreviations and Acronyms

IIC Italian Inventory of Industrial Chemicals  
 NCA National Agency for Transport by Land and  
 Ocean  
 OSHA American Society for the Testing of Materials  
 BW Body weight  
 CMR Carcinogen, Mutagen or Reproductive toxin  
 DIN Standard of the German Institute for Standardisation  
 DS Domestic Substances List  
 Canada Concentration associated with  
 response  
 Loading rate associated with response  
 MS emergency Scenarios  
 NCS Existing and New Chemical Substances  
 Japan Concentration associated with  
 growth rate response  
 RG emergency Response Guide  
 GS Globally Harmonised System  
 GP Good Laboratory Practice  
 IARC International Agency for Research on Cancer  
 IBC International Association of Banks  
 IBC International Code for the Construction and  
 Equipment of Ships carrying Dangerous Chemicals in Bulk  
 ICIO International Classification Organisation  
 CSC Inventory of Existing  
 Chemical Substances in China  
 IMDG International Maritime Dangerous Goods  
 IMO International Maritime Organisation  
 IS India Safety and Health Law  
 Japan ISO International Organisation for Standardisation  
 KCI Korea Existing Chemicals Inventory  
 CLO Critical Concentration to CL  
 CLD Critical Dose to CL  
 CLD Critical Dose to CL  
 Median Critical Dose  
 MRPO International Convention for the Prevention of Pollution from Ships  
 RCOSR Code of Agreement for the Facilitation of Transport of Dangerous Goods  
 nO otherwise Specified  
 Nc Clean Norm  
 NOC No Observed Adverse Effect  
 Concentration  
 NOEC No Observed Adverse Effect Concentration  
 NOEL No Observable Effect  
 Loading Rate  
 NOM Official Mexican Norm  
 NP National Ecology Program  
 NLoC New Zealand Inventory of Chemicals  
 OECD Organisation for Economic Co-operation and Development  
 OPPS Office of Chemical Safety and Hazard Prevention  
 PB Persistent Bioaccumulative and Toxic substance  
 PICCS Pipelines Inventory of Chemicals and Chemical Substances  
 SOR Sustainable Structure Security Relations  
 RCC Regulation  
 No 07/006 of the European Parliament and of the Council concerning the Registration,  
 Evaluation, Restriction and Prohibition of Chemicals  
 SSD Sequestering Decomposition  
 Temperature  
 SDS Safety Data Sheet  
 CSI Taiwan Chemical Substance Inventory  
 DG Transportation of Dangerous Goods  
 CI Canadian Existing Chemicals Inventory  
 SC Toxic Substances Control  
 United States  
 UN United Nations  
 NRDG United Nations Recommendations on the Transport of Dangerous Goods  
 PBT Very Persistent and Very Bioaccumulative  
 WMS Workplace Hazardous Materials Information System

# SAFETY DATA SHEET.

## Shell Gadus S2 V220 2

Version 47

Revision Date  
30000000

Print Date 00000000

Date of preparation or review 30000000

### Further information

Other information  
A vertical bar in the left margin indicates an amendment from the previous version

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for other materials used in combination with any other materials or in any process unless specified in the label.

00 00N

### Section 1. Identification

**Product identifier**

**Product Identity**

Propane

**Other means of identification**

PG Classified Petroleum Gas LPG Gas

**Relevant identified uses of the substance or mixture and uses advised against**

Propane is commonly used as a fuel for heating, cooking, automobiles, work trucks, crop drying and welding and cutting operations. Propane is used in industry as a refrigerant, solvent and as a chemical feedstock.

**Details of the supplier of the safety data sheet**

**Company Name**

Superior Propane  
700 Jamieson Pkwy  
Cambridge  
ON N3C 4N6

**Emergency**

**24 hour Emergency Telephone No.**

Call 1-800-363-6666 or 1-666 on a cellular phone

**Customer Service:**

1-773-7467

### Section 2. Hazard(s) identification

**Classification of the substance or mixture under US OSHA's Hazard Communication Standard (1910.1200) revised 2024 and Canadian Hazardous Products Regulations (SOR/2015-17) (GHS revision 7)**

Flammable Gas category 2.0

Extremely flammable gas

Classified Gas 2.0

Contains gas under pressure may explode if heated

Simple asphyxiant

May displace oxygen and cause rapid suffocation

**Label elements**



**Danger**

Extremely flammable gas

Contains gas under pressure may explode if heated

May displace oxygen and cause rapid suffocation

**[Prevention]**

Keep away from heat, sparks, open flames and other ignition sources. No smoking.



[Response]

P377 Leaking gas fire do not extinguish unless leak can be stopped safely

P303 In case of leakage eliminate all ignition sources

[Storage]

P403 Store in a well-ventilated place

P404 P403 Prohibit from smoking Store in a well-ventilated place

[Disposal]

No GHS disposal statements

Other hazards

This product contains no PBT chemicals

This product contains no endocrine disrupting chemicals

May displace oxygen and cause rapid suffocation

Section 3. Composition/information on ingredients

This product contains the following substances that present a hazard within the meaning of US OSHA's Hazard Communication Standard 29 CFR 1910.1200 revised 2014 and Canadian Hazardous Products Regulations (SOR 2002/700) GHS revision 7

Ingredient/Chemical Designations	Weight %	GHS Classification	Notes
Propane CAS Number: 74-98-6 Synonyms: No available information	80 - 100	Flammable Gas, category 1;H220 Liquified Gas;H280 Simple Asphyxiant	No data available
Ethane CAS Number: 74-84-0 Synonyms: No available information	1 - 5	Flammable Gas, category 1;H220 Gas under pressure;H280	No data available
Propene CAS Number: 115-07-1 Synonyms: PROPYLENE	1 - 5	Flammable Gas, category 1;H220 Gas under pressure;H280	No data available
Butane CAS Number: 106-97-8 Synonyms: No available information	0.5 - 1.5	Flammable Gas, category 1;H220 Liquified Gas;H280 Simple Asphyxiant	No data available

The actual concentration or concentration range is withheld as a trade secret

PBT PBT PBT substance or PBT substance

The GHS codes of the hazards are shown in Section 6

Section 4. First aid measures

Description of first aid measures

General

In all cases of doubt or when symptoms persist seek medical attention

Never give anything by mouth to an unconscious person

Inhalation

Remove to fresh air keep patient warm and a resuscitating is irregular or stopped give artificial respiration if unconscious place in the recovery position and obtain immediate medical attention Give nothing by mouth

Eyes

Irrigate copiously with clean water for at least 15 minutes holding the eye lids apart and seek medical attention



**Skin** Remove contaminated clothing. Wash skin thoroughly with soap and water or use a recognized skin cleanser.

**Ingestion** Do not swallow. Obtain immediate medical attention. Keep aches. Do NOT induce vomiting.

**Most important symptoms and effects, both acute and delayed**

**Overview** No specific symptom data available. Reactions may occur.

**Section 5. Fire-fighting measures**

**Extinguishing media**

Recommended extinguishing media: carbon dioxide, foam, CO<sub>2</sub> powder, water spray. Unsuitable extinguishing media: Do not use water.

**Special hazards arising from the substance or mixture**

Cardiac decomposition. Oxides of carbon. Keep away from heat, sparks, open flames and other ignition sources. No smoking.

**Advice for fire-fighters**

As with all fires, wear positive pressure self-contained breathing apparatus (SCBA) with a full face piece and protective clothing. Persons with respiratory protection should leave area. Wear SCBA during clean up immediately after fire. No smoking.

Extremely flammable gas. Contains gas under pressure, may explode if heated. Will be easily ignited by heat, sparks or flames. Will form explosive mixtures with air. Vapors from liquefied gas are initially heavier than air and spread along ground. Vapors may reach to source of ignition and flash back. Cylinders exposed to fire may bend and release flammable gas through pressure relief devices. Containers may explode when heated. Refrigerated cylinders may rock. DO NOT DRINK, ISN'T DRINKING GAS, IRON, NON-SS, CORK CAN BE STOPPED.

Liquid, rail car or tank truck is involved in a fire: ISO 1000 for 600 meters in all directions. Also consider initial evacuation for 600 meters in all directions.

Fire involving tanks: ignore fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water. If water fire is on, do not direct water at source of leak or safety devices. Cicing may occur. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engaged in fire. For massive fire, use unmanned hose holders or monitor nozzles. It is impossible to withdraw from area and retire burn.

Leaking gas fire: Do not extinguish unless leak can be stopped safely. Eliminate all ignition sources if safe to do so. Vapors may cause dizziness or asphyxiation without warning. Some may be irritating inhaled at high concentrations. Contact with gas or liquefied gas may cause burns, severe injury and/or frostbite. Fire may produce irritating and/or toxic gases. Wear positive pressure self-contained breathing apparatus (SCBA). Self-contained breathing apparatus with only provide limited protection. Always wear appropriate protective clothing when handling refrigerated/cryogenic liquids.

ERG Guide No. 222

**Section 6. Accidental release measures**

**Personal precautions, protective equipment and emergency procedures**

As an immediate precautionary measure, isolate spill or leak area for at least 500 meters (330 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Many gases are heavier than air and will spread along ground and



do not use in low or confined areas (sewers, basements, tanks). Keep away from low areas. MINIMUM ignition sources  
no smoking, fires, sparks or flames in immediate area. Use of equipment used when handling the product must be  
grounded.

**Environmental precautions**

Do not allow spill to enter drains or waterways.

Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove  
soiled clothing and wash thoroughly before reuse.

**Methods and material for containment and cleaning up**

Spill leak if you can do it with no risk is possible. In leaking containers so that gas escapes rather than liquid. Use  
water spray to reduce vapors or dilute or cold dry cold flowing water. Do not use direct water as a source of leak.

Prevent spreading of vapors through sewers, ventilation systems and confined areas. In a large area, the gas has  
dispersed. CLEAN when in contact with refrigerated, cryogenic liquids, many materials become brittle and are  
likely to break with warning.

**Section 7. Handling and storage**

**Precautions for safe handling**

Handle containers carefully to prevent damage and spillage.

See section 6 for further details. Prevention.

**Conditions for safe storage, including any incompatibilities**

Store in a well-ventilated place. Protect from sunlight. Store away from incompatible materials. See Section 10 for  
information on Incompatible Materials. Keep away from the reaction of children.

Incompatible materials: Oxidizers.

See section 6 for further details. Storage.

**Specific end use(s)**

No data available.

**Section 8. Exposure controls / personal protection**

**Control parameters**

**Exposure**

CAS No.	Ingredient	Source	Value
74-40	Propane	CGI	Do not breathe vapors. See Safety Data Sheet for more information. See label.
		OSHA	No respirator required.
		NIOSH	No respirator required.
		NIOSH	0.1 ppm (W)
		British Columbia	No respirator required.
		Manitoba	See Appendix 1. Minimum Oxygen Concentration. See label.
		New Brunswick	No respirator required.



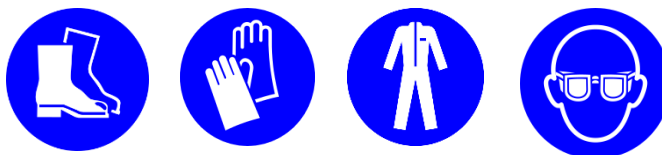
# Safety Data Sheet Propane

Revision  
Date: 11/02/2024

		Newfoundland and Labrador	See Appendix Minimum Oxygen Concentration Table
		Nova Scotia	See Appendix Minimum Oxygen Concentration Table
		Norwest Territories	000 ppm W 000 ppm S
		Nunavut	000 ppm W 000 ppm S
		Ontario	see Appendix Minimum Oxygen Concentration
		Prince Edward Island	See Appendix Minimum Oxygen Concentration Table
		Quebec	Not established limit
		Saskatchewan	000 ppm W 000 ppm S
		Yukon	Not established limit
74006	Propane	CGI	Direct oxygen analysis position Table
		OSHA	000 ppm 000 mg/m <sup>3</sup>
		NIOSH	W 000 ppm 000 mg/m <sup>3</sup>
		Canada	000 ppm W
		British Columbia	Not established limit
		Manitoba	See Appendix Minimum Oxygen Concentration Table
		New Brunswick	Not established limit
		Newfoundland and Labrador	See Appendix Minimum Oxygen Concentration Table
		Nova Scotia	See Appendix Minimum Oxygen Concentration Table
		Norwest Territories	000 ppm W 000 ppm S
		Nunavut	000 ppm W 000 ppm S
		Ontario	see Appendix Minimum Oxygen Concentration
		Prince Edward Island	See Appendix Minimum Oxygen Concentration Table
		Quebec	000 ppm W 000 mg/m <sup>3</sup> W
		Saskatchewan	000 ppm W 000 ppm S
		Yukon	Not established limit
0607	Btane	CGI	000 ppm position Table
		OSHA	Not established limit
		NIOSH	W 00 ppm 000 mg/m <sup>3</sup>
		Canada	000 ppm W
		British Columbia	70 ppm S
		Manitoba	000 ppm S position Table listed Under Btane isomers
		New Brunswick	00 ppm W 000 mg/m <sup>3</sup> W
		Newfoundland and Labrador	000 ppm S position Table listed Under Btane isomers
		Nova Scotia	000 ppm S position Table listed Under Btane isomers
		Norwest Territories	000 ppm W listed Under Btane isomers 000 ppm S listed Under Btane isomers

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### Exposure controls



### Respiratory

Engineering controls and ventilation are not sufficient controls to be used when the allowable limits when an appropriate NIOSH MS<sub>l</sub> approved air-purifying respirator or a<sub>l</sub> meets the requirements of CS<sub>l</sub> Standard C<sub>l</sub>N<sub>l</sub>CS<sub>l</sub> 44<sub>l</sub> or self-contained breathing apparatus may be used. S<sub>l</sub> filtered air breathing apparatus may be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.

### Eyes

Wear cold insulating face shield and eye protection use equipment or eye protection that meets the standards referenced by CS<sub>l</sub> Standard C<sub>l</sub>N<sub>l</sub>CS<sub>l</sub> 43<sub>l</sub> and OS<sub>l</sub> regulations in <sub>l</sub> C<sub>l</sub>R<sub>l</sub> 000<sub>l</sub>33<sub>l</sub> or Personal Protective Equipment.



**Skin** Wear protective clothing. Wear protective gloves. Wear cold insulating gloves. Consult manufacturer specifications for further information.

**Engineering Controls** Use ventilation adequate to keep exposures (airborne levels) of gases and vapors below recommended exposure limits.

**Other Work Practices** Handle according to established industrial hygiene and safety practices. Consult competent industrial hygienist to determine hazard control and/or the PPE manufacturer to ensure adequate protection. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet. Promptly remove soiled clothing and wash thoroughly before reuse.

See section 8 for further details.

## Section 9. Physical and chemical properties

### Information on basic physical and chemical properties

<b>Physical State</b>	Gas
<b>Color</b>	Colorless
<b>Odor</b>	Odorless. Scentless odorized with ethyl mercaptan. Skunky odor similar to boiling cabbage.
<b>Melting point / freezing point</b>	-182.3 °C (-306.1 °F)
<b>Initial boiling point and boiling range</b>	-42.1 °C (-44 °F)
<b>Flammability (solid, gas)</b>	Gas
<b>Upper/lower flammability or explosive limits</b>	<b>Lower Explosive Limit:</b> 2.1% Propane <b>Upper Explosive Limit:</b> 9.5% Propane
<b>Flash Point</b>	-103.4 °C (-154.1 °F) Closed Cup
<b>Auto-ignition temperature</b>	430 °C (806 °F)
<b>Decomposition temperature</b>	Not applicable
<b>pH</b>	Not applicable
<b>Viscosity (cSt)</b>	Not applicable
<b>Solubility in Water</b>	Slightly soluble by volume. 7.0% (64 °F)
<b>Partition coefficient n-octanol/water (Log Kow)</b>	Not applicable
<b>Vapor pressure (Pa)</b>	43 kPa (at 37 °C / 100 °F)
<b>Relative Density</b>	0.50 (Water = 1)
<b>Vapor Density</b>	1.5 (Air = 1)
<b>Evaporation rate (Ether = 1)</b>	Rapid
<b>VOC Content</b>	Not applicable
<b>Other information</b>	
No other relevant information.	



**Section 10. Stability and reactivity**

**Reactivity**

Stable under normal conditions

**Chemical stability**

Stable under normal conditions

**Possibility of hazardous reactions**

No data available

**Conditions to avoid**

Contact with incompatible materials. Sources of ignition are to be avoided.

**Incompatible materials**

Oxidizers

**Hazardous decomposition products**

Oxides of carbon

**Section 11. Toxicological information**

**Acute toxicity**

None. When no route specific LD50 data is available for an acute or inhaled concentration acute toxicity point estimate was used in the calculation of the product's acute toxicity estimate.

Ingredient	Oral LD50, mg/kg	Skin LD50, mg/kg	Inhalation Vapor LC50, mg/L/4hr	Inhalation Dust/Mist LC50, mg/L/4hr	Inhalation Gas LC50, ppm
Propane 74-20-6	No data available	No data available	6000 RAC Category N	No data available	No data available
Ethane 74-84-0	No data available	No data available	No data available	No data available	No data available
Propane 74-20-6	No data available	No data available	No data available	No data available	No data available
Butane 106-97-8	No data available	No data available	6000 RAC Category N	No data available	No data available

**Carcinogen Data**

CAS No.	Ingredient	Source	Value
74-84-0	Ethane	IARC CGI	Group 4 No established limit
74-20-6	Propane	IARC CGI	Group 4 No established limit
106-97-8	Butane	IARC CGI	Group 4 No established limit
74-20-6	Propane	IARC CGI	Group 4 Yes



# Safety Data Sheet Propane

Revision  
Date: 11/02/2024

Classification	Category	Hazard Description
Acute toxicity (oral)	000	No significant hazard
Acute toxicity (dermal)	000	No significant hazard
Acute toxicity (inhalation)	000	No significant hazard
Skin corrosion/irritation	000	No significant hazard
Serious eye damage/irritation	000	No significant hazard
Respiratory sensitization	000	No significant hazard
Skin sensitization	000	No significant hazard
Germ cell mutagenicity	000	No significant hazard
Carcinogenicity	000	No significant hazard
Reproductive toxicity	000	No significant hazard
Specific target organ effects	000	No significant hazard
Specific target organ effects	000	No significant hazard
Aspiration hazard	000	No significant hazard

**Possible routes of entry:** No data available  
**Symptoms and effects, both acute and delayed:**  
 No specific symptom data available  
 Acute symptoms only

## Section 12. Ecological information

### Toxicity

No additional information provided for this product. See Section 3 for chemical specific data.

### Aquatic Ecotoxicity

Ingredient	96 hr LC50 fish, mg/L	48 hr EC50 crustacea, mg/L	ErC50 algae, mg/L
Propane 074006	40000	643 Daphnia	37000 algae
Propane 074040	No data available	No data available	No data available
Propane 000007	No data available	No data available	No data available
Butane 000607	40000 (Piscis)	643 Daphnia	37000 algae

### Persistence and degradability

There is no data available on the degradation in soil.

### Bioaccumulative potential

No available

### Mobility in soil

No data available

### Results of PBT and vPvB assessment

This product contains no PBT/vPvB chemicals.



Other adverse effects

No data available

Section 13. Disposal considerations

Waste treatment methods

Waste should not be released to sewers. Observe all federal, state and local regulations when disposing of this substance.

Section 14. Transport information

	Domestic Surface Transportation	IMO / IMDG (Ocean Transportation)	ICAO/IATA
UN number	UN07	UN07	UN07
UN proper shipping name	UN07 Performed gases or performed propane gas	Performed gases or performed propane gas	Performed gases or performed propane gas
Transport hazard class(es)	TDG Hazard Class: Sub Class: No	IMDG: Sub Class: No	Air Class: Sub Class: No
Packing group	No	No	No

Environmental hazards

Marine Pollution: No

Special precautions for user

No

Section 15. Regulatory information

Regulatory Overview: The regulatory data in Section 15 is not intended to be a comprehensive or only selected regulations are represented.

This product has been classified in accordance with US OSHA's Hazard Communication Standard (1910.1200) revised 2014 and Canadian Cardio's Products Regulations (SOR/2007 amended 2010) GCS revision 7 and the SDS contains appropriate information required by those regulations.

Toxic Substance Control Act (TSCA)

- Bane
- ane
- Proane
- Proene

EPCRA 302 Extremely Hazardous:

to the best of our knowledge there are no chemicals which require reporting under this statute.



**EPCRA 313 Toxic Chemicals:**

Propane

**Canadian Domestic Substance List (DSL):**

Butane

Propane

Propane

Propane

**Canadian Non-Domestic Substance List (NDSL):**

To the best of our knowledge there are no chemicals additives which require reporting under this statute

**Proposition 65 - Carcinogens (>0.0%):**

To the best of our knowledge there are no chemicals additives which require reporting under this statute

**Proposition 65 - Developmental Toxins (>0.0%):**

To the best of our knowledge there are no chemicals additives which require reporting under this statute

**Proposition 65 - Female Repro Toxins (>0.0%):**

To the best of our knowledge there are no chemicals additives which require reporting under this statute

**Proposition 65 - Male Repro Toxins (>0.0%):**

To the best of our knowledge there are no chemicals additives which require reporting under this statute

**Proposition 65 Label Warning:**

This product contains no chemicals known to the State of California to cause cancer and birth defects or other reproductive harm

**Section 16. Other information**

Revision Date 11/02/24

The information and recommendations contained herein are based on data believed to be correct. However, no guarantee or warranty of any kind is expressed or implied. No liability is made with respect to the information contained herein. We accept no responsibility and disclaim liability for any damages which may be caused by errors or omissions. Customers/users of this product must comply with applicable local, state and safety laws, regulations and orders.

The information on the label in section 3 is:

0 Extremely flammable gas

0 Contains gas under pressure may explode if heated

**Disclaimer**

The information contained in this document applies to this specific material as specified. It may not be valid for this material if used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

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